
REPORT



OF THE

DEPARTMENTAL COMMITTEE

ON

IRISH FORESTRY.

Presented to Parliament by Command of His Majesty.



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1908.

TO HIS EXCELLENCY JOHN CAMPBELL, EARL OF ABERDEEN, &c., &c.,
LORD LIEUTENANT-GENERAL AND GENERAL GOVERNOR OF IRELAND.

MAY IT PLEASE YOUR EXCELLENCY,

I am directed by the Vice-President to submit to Your Excellency
the Report of the Departmental Committee on Irish Forestry.

I have the honour to remain,

Your Excellency's faithful Servant,

T. P. GILL,

Secretary.

Department of Agriculture and
Technical Instruction for Ireland,
Upper Merrion Street,
Dublin, 6th April, 1908.

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COPY

OF

MINUTE APPOINTING THE COMMITTEE.

I HEREBY nominate and appoint a COMMITTEE to inquire into and report upon the following matters relating to the improvement of forestry in Ireland, viz. :—

- (1) The present provision for State aid to forestry in Ireland;
- (2) The means whereby, in connection with the operation of the Land Purchase Acts, existing woods may be preserved, and land suitable for forestry acquired for public purposes; and
- (3) The financial and other provisions necessary for a comprehensive scheme of afforestation in Ireland.

The Committee will consist of the following :—

THOMAS PATRICK GILL, Esq., Secretary of the Department of Agriculture and Technical Instruction for Ireland (Chairman);

The Right Hon. LORD CASTLETOWN of Upper Ossory, C.M.G., D.L.;

WILLIAM REDMOND, Esq., M.P.;

Most Rev. DENIS KELLY, D.D., Lord Bishop of Ross, member of the Agricultural Board;

HUGH DE FELLENSBERG MONAGOMERY, Esq., D.L., member of the Agricultural Board;

WILLIAM FREDERICK BAILEY, Esq., C.B., one of the Estates Commissioners;

WILLIAM ROGERS FISHER, Esq., M.A., Delegate for Instruction in Forestry at the University of Oxford;

Professor JOHN RITCH CAMPBELL, B.Sc., Assistant Secretary in respect of Agriculture of the Department of Agriculture and Technical Instruction for Ireland.

(Signed) T. W. RUSSELL,

Vice-President of the Department of Agriculture and Technical Instruction for Ireland.

Dated this 29th day of August, 1907.

Departmental Committee on Irish Forestry.

REPORT.

TO T. W. RUSSELL, ESQ., M.P.,

VICE-PRESIDENT OF THE DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

Sir,

1. In the course of our inquiry we have become so convinced of the urgent need of measures to deal with the subject of forestry in Ireland, as it is affected by recent Land Acts and other circumstances, that we have made particular endeavours to quicken our investigation and present an early Report. We have not allowed this desire, however, to interfere with the thoroughness of our search for and study of the facts requiring to be considered, or the deliberation necessary in forming the conclusions to which we have come. It would have been impracticable for us to have got so far in the time but that we have been fortunate in having at our service the fruits of certain work already done, and in being helped by collateral investigations kindly made for us by the staffs of the Department of Agriculture and the Land Commission, and by information specially supplied and facilities given by other public Departments. Moreover, the evidence forthcoming in our direct inquiry has proved particularly pertinent, as we confined our selection of witnesses and of points for investigation as far as practicable to those that, from our acquaintance with the circumstances of the country, seemed likely to get us most closely and promptly to the essential facts. It is our hope that the present Report may serve the main purpose we have kept in view, namely to furnish a basis for immediate practical action.

We have tried to make the Report comprehensive, in view of the need of definite information on a question of great urgency about which some misconceptions are prevalent, and which has not previously been made the special subject of an Irish Commission of Inquiry. With this aim we have arranged to issue simultaneously the volume of Evidence and Appendices, and we earnestly hope it will be examined in connection with the Report.

INTRODUCTION—METHOD OF THE INQUIRY AND DIVISION OF SUBJECT.

PROCEDURE.

2. The Committee began its sittings on the 3rd of last October. Fifteen public sittings for taking evidence were held between that date and 13th December.

Witnesses examined.

3. The following types of witnesses were invited to give evidence:—Experts in forestry who had special experience in Ireland; representatives of public Departments, who have to do with the administration of the Land Acts or with assistance for tree-planting and land improvement; landowners who have given particular attention to the management of woods, including Mr. Munro-Ferguson, who was Chairman of the Departmental Committee on British Forestry; land agents, estate managers and foresters dealing with

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existing woods in Ireland; timber merchants who purchase and cut Irish woods, as well as timber merchants in England and Scotland, who are extensively importing Irish timber; proprietors or representatives of Irish saw-mills and wood-working industries, and other Irish manufacturers who are directly affected by the circumstances of the timber supply; representatives of the Irish railway companies as large consumers of timber, representatives of the Irish Forestry Society, the Irish Landowners' Convention, the Dublin Industrial Development Association, the Irish Branch of the Surveyors' Institution, and other bodies. Mr. Stafford Howard, C.B., one of the Commissioners of His Majesty's Woods, Forests, and Land Revenues, gave evidence as to the functions of his Department and the position of the hereditary land revenues of the Crown, of which the Irish Quit and Crown Rents form a part; and a historical memorandum giving further information on this subject has been prepared for the Committee by the Superintendent of the Quit Rent Office in Ireland. Evidence was given on behalf of the Board of Public Works and the Congested Districts Board, and these Boards also assisted the inquiry in other ways.

Direct Investigation

4. In addition to taking evidence, the Committee resolved to make a direct investigation in the country with a view to ascertaining as far as was practicable the condition of existing woodlands, and the nature, extent, and situation of available land which might be suitable for forestry purposes. The Department of Agriculture and Technical Instruction had already, in 1903-4, caused a survey of five south-eastern counties to be made, by Dr. J. Nisbet, late of the Indian Forest Service. Moreover, the Department, having as the outcome of this survey established a forestry station at Avondale, County Wicklow, and attached a forestry expert regularly to their staff, this officer, Mr. A. C. Forbes, F.H.A.S., had been supplementing the inquiry of Dr. Nisbet. The results of these inquiries were before the Committee. The Department, further, placed Mr. Forbes at the service of the Committee for the purpose of making, with the assistance of two other officers, the direct investigation they required. The Estates Commissioners, at the same time, issued a circular to their Inspectors at work on estates in the country, asking them for replies to a series of queries submitted by the Committee, and their Resident Inspector conferred with the Committee, and collated the reports of their staff. The Congested Districts Board, through their Chief Land Inspector and his staff, similarly co-operated. Members of the Committee themselves made certain inspections during this investigation.

Special Returns, Reports, &c.

5. To supplement the information thus obtained, the Statistics and Intelligence Branch of the Department at the request of the Committee procured from the Constabulary a special return as to the number of portable and other saw-mills now at work in connection with Irish woods. As the Committee particularly desired to have information with regard to the wood-working industries, and the relation between such industries and local woods, the Department detailed officers to supplement by local inquiries the facts given in evidence or in replies to the circular of queries issued on this subject. It being necessary to consider the effect of past legislation or other action of the State or public bodies for the encouragement of forestry, Mr. C. Litton Falkiner, B.L., Legal Assistant Land Commissioner, has kindly furnished the Committee with a statement on this subject; and an interesting memorandum detailing the nature and the effects of the bounties for tree-planting provided by the Irish Parliament and the Royal Dublin Society in the 18th century has been prepared for the Committee by Mr. Richard Moss, Registrar of the Society. The Committee have taken cognisance of the results of previous Committees of Inquiry and of other authoritative statements and reports on the subject of forestry in Ireland or Great Britain, and they have also given attention to the information available as to forestry operations in other countries.

Conference with Representatives of County Councils.

6. After finishing the sittings for taking evidence the Committee arranged for a conference of Chairmen and Vice-Chairmen of County Councils, with a view to eliciting their views as to the part which County Councils might be expected to take in a national scheme of afforestation. This conference was held on 2nd of last January in the Reception Room, Leinster House, Dublin, by kind permission of the Royal Dublin Society, and as a result it was arranged that the Chairmen and Vice-Chairmen would bring the subject before meetings of their respective councils at an early date.

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DIVISION OF SUBJECT

7. The arrangement of the Report is as follows:—

PART I. examines the present situation of the Irish woodlands, and discloses the fact that largely under the influence of the Land Purchase Acts they are being wastefully reduced and exhausted to a deplorable extent.

PART II. shows that amongst other consequences this process involves the ruin of an important series of Irish wood-working industries which depend upon the native woodlands for their supply of timber.

PART III. considers the arguments for a national scheme of afforestation furnished by the necessity for checking the destructive influences of present legislation; the enhanced value of forestry to modern countries consequent on the increasing world-demand for timber; the suitability of Irish conditions for tree-growing; and Ireland's own economic needs in respect of timber.

PART IV. considers the results of an investigation into the extent of land now available for forestry purposes in Ireland.

PART V. describes proposals for a national scheme of afforestation, including the development and financing, as an effective Forestry Authority, of the Forestry Section of the Department of Agriculture and Technical Instruction, which now possesses the necessary legal powers; and the creation of a forest area managed partly by the State, partly through County Councils, and partly by private owners.

PART VI. considers the undeveloped and unorganized condition of the Irish timber industry, and makes suggestions for its improvement.

PART VII. deals with technical instruction related to Forestry.

PART VIII. deals with legislative amendments; forestry and the unemployed problem; and other miscellaneous points.

PART IX. examines the finance of the subject, gives a series of financial estimates, and suggests that the proceeds of the Irish Quit and Crown Rents might be appropriately utilised for promoting forestry in Ireland.

PART X. is a summary of the recommendations, with a concluding remark.

8. Before proceeding to deal with these several sections, we think it well to define here the main basis on which our inquiry proceeded and to state one general conclusion at which we have arrived.

I. DEFINITIONS:—

At the outset of an investigation, which was to lead, in the words of the terms of reference, to suggestions for "the financial and other provisions necessary for a comprehensive scheme of afforestation in Ireland," the Committee put before itself this question: What are the principal objects to be attained by any scheme of afforestation supported by public funds? It was agreed that these objects may be thus stated:—

The maintenance directly or indirectly of an area of woodland sufficient to produce the supply of timber required by the

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SECTIONS—

country for domestic and farming purposes, for the development of industries and commerce essential to its prosperity, and for providing shelter needed for successful agriculture.

We endeavoured throughout our inquiry to test how far actual circumstances in Ireland approached towards or fell short of the fulfilment of these objects, and how far and in what ways potential circumstances permitted of their being attained in the future.

II. GENERAL CONCLUSION:—

- (1). That with the transfer of land under the Purchase Acts to peasant owners, an obligation in respect to existing woods, as well as other obligations connected with landed property, passes from the selling proprietors to the State;
- (2). That a comprehensive scheme of forestry, whether undertaken through local authorities, private owners, or directly through a Forestry Department, can only be carried out by or under the direction of the State;
- (3). That an exceptional opportunity, which cannot recur, for acquiring land suitable for forestry, and not so suitable for any other use, presents itself now in Ireland, in connection with the Land Purchase Acts; and
- (4). That such a scheme, including the preservation and extension of existing woods, and the creation of a new forest area, is a sound investment for the nation, necessary for her agricultural and industrial development, and for the provision of an important capital asset which must otherwise be wasted.

PART I.

PRESENT SITUATION OF IRISH WOODS.

*Ireland compared
with other
countries.*

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PART I.—THE PRESENT SITUATION OF IRISH WOODS.

AREA UNDER TIMBERS.

9. There is considerable difficulty in determining exactly the area of woods in Ireland; but the independent detailed surveys made for the Committee in certain parts of the country go to show that the total figure given in the agricultural statistics of the estimated area, may be taken fairly to represent the actual area. That area was in 1907, 306,661 acres, or 1·5 per cent. of the total area of the country. In England the percentage of land under woods is 5·3 per cent.; in Scotland 4·6 per cent.; and in Wales 3·9 per cent. The comparison with continental countries is more striking. In Austria 32 per cent. of the area of the country is under woods; in Hungary 27 per cent.; in France 17 per cent.; in Belgium 17 per cent.; in Germany 26 per cent. In Holland, out of a total area of 8,038,000 acres, there are 633,775 acres, or 8 per cent. of woods. Denmark has over 7 per cent. of the land under woods. She is an agricultural country, less than half the size of Ireland, and her acreage under woods is double that of Ireland. Iceland is the only country in Europe whose proportion of woodland falls below that of Ireland. Whether Ireland's area of 1·5 per cent. of woodland is too low for the economic welfare of the country, we will consider when we have examined the actual state of this area at the present time.

*Deterioration of
Woodlands.*

10. We find that, such as it is, this area is steadily shrinking. The total area under woods is being reduced; and from the character of the cutting, the quality of the woods left standing is being deteriorated.

EFFECTS OF LAND PURCHASE ACTS.

*Existence of
Woodlands an
obstacle to
purchase of Estates
under existing
Acts.*

11. This state of things is due to a variety of causes more or less exceptional. The breaking up of large estates under the operations of the various Land Purchase Acts has naturally lessened the interest of many landlords in the keeping up of their woodlands, and in the case of resident landlords who might be desirous of planting, it has restricted the area over which they could carry on forestry work by isolating portions of the estate from the demesne

or central part, and increasing the costs and difficulties of supervision. This would be an inevitable and permanent consequence of any large scheme of land purchase, making one set of landlords anxious to realise on timber on land with which they have no further concern, and limiting the opportunities of another set. But the land purchase legislation of Ireland, and especially the Act of 1903, has been accompanied by conditions which exceptionally press on the woodlands. No provision was made in the Act—save one, which, being unaccompanied by any financial provision to give effect to it, has been practically a dead letter—for dealing with the woodlands on estates being sold to the tenants or otherwise providing a substitute for the landlord in regard to these and similar general estate matters. The provision referred to is section 4, which enables advances to be made to trustees for the purchase of any parcel of an estate sold under the Act for the purpose of the planting and preservation of woods, and which can be interpreted as allowing a public body, such as the Department of Agriculture and Technical Instruction or a County Council, to be considered trustees in that sense. In the case of estates purchased by the Estates Commissioners (under sections 6, 7, and 8), the Commissioners cannot in practice buy the woods on any terms that would be satisfactory to the landlord, and if they do buy them they cannot keep them. In the case of estates under section 1, they cannot offer any acceptable alternative to the vendor to prevent him from selling the woods to timber merchants to be pared to the stump, and neither can they take any steps to induce the tenant purchasers to refrain from disposing in the same way of timber given to them with their holdings. This was decided by Mr. Justice Meredith in the case of the Cookman Estate, Co. Wexford. In their memorandum to the Committee, the Estates Commissioners tell us that, not being a forestry department, and being unable to undertake the management of woods and plantations, they could "only include the price of such woods and plantations in the price they offer for the estate where they see their way to at once realising such part of the price by a sale and transfer of the woods and plantations to an authorised Forestry Department or County Council for preservation and management, or to a timber merchant, who would probably buy to cut down." In short, if they pay a price for woods they must at once realise, which means, in practice, that they cannot pay a price. The consequence is that the presence of woods on an estate actually may become a sort of obstacle to purchase. "The very existence of woods" said a representative of the Land Commission, "in present conditions, interferes with and retards the transfer of tenanted or untenanted (grass) lands." Again, "the presence of outlying scattered woods may, so long as the trees remain unfelled, prevent a landlord from selling his estate to the Land Commission." What then is the landlord to do? "The wood, being an incubus to the vendor, who can find no purchaser save a timber merchant, consequently disappears, often while the trees are still immature."

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3 Edw. 7, ch. 37.

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Woods on Estates purchased by the Land Commission.

12. Where the Estates Commissioners have bought estates on which there are woods they have been seriously embarrassed. An effective arrangement would have been for the Department of Agriculture to be put in a position to take over, at a fair price, such woods under sections 4 and 20, and either maintain them itself or transfer them to County Councils or other parties, under conditions securing their preservation and proper management. The Department and the Estates Commissioners originally hoped that this arrangement might be feasible, and they entered into correspondence with a view to giving it effect. A wood was actually acquired by the Department, under Sections 4 and 20, for the purposes of the Forestry Station at Avondale, and the Kildare County Council, with the assistance of the Department, acquired another wood under the same sections for the purpose of an experiment which the Department was anxious to see tried, showing how the co-operation of the County Councils in this matter would work out. The Estates Commissioners offered to sell further woods coming into their hands, to the Department, but the Department was obliged to call a halt. It was not provided with funds to enter upon a systematic series of operations, involving the payment of

*Provision for
preservation of
woods under
Sections 4 and 20
of Land Act, 1903,
inoperative
owing to lack
of funds.*

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IRISH WOODS.
—
Appendix 16.

purchase annuities, expenses of management and of administration, whether directly or through County Councils, which would in effect mean a comprehensive scheme of forestry. Consequently the Estates Commissioners had in such cases to sell woods bought by them to the timber merchant just as a selling-out landlord does in cases of direct sales. The Committee in one of their personal inspections witnessed a deplorable instance of a transaction of this kind. The beautiful woods on the Mount Shannon demesne in County Limerick, where the timber was largely immature, have been destroyed; and, through the removal of the shelter which the woods provided, even the agricultural value of the new holdings carved out of the demesne has been diminished; while the land on which the woods stood is useless for any purpose to the tenant purchasers. But the Estates Commissioners here had no option under the law as it stands. They had paid for the wood in this case, and the price they were receiving for the re-sale of the estate was short by about £3,000 of the price they had arranged to pay for the estate to the owner. They were obliged to make good this shortage by an immediate sale of the woods.

A Destructive Process.

13. The combined influences, under the law as it stands, operating on directly and indirectly sold estates, and through selling landlords, buying tenants and the Land Commission, have set up a process most destructive to the Irish woodlands. This process was helped in 1903 by the exceptional storm of that year, which threw an excessive quantity of timber on the market. At the same time the demand for timber was increasing in Great Britain owing to the supplies from abroad beginning to get short, and the price of foreign timber going up. This situation brought English and Scotch timber merchants over to Ireland to get the timber which was offering here so abundantly at the time. With the landowner having timber on his hands which is an obstacle to the sale of his estate; with the Estates Commissioners or any other public authority unable to buy it on terms satisfactory to him; with the tenant purchaser in the "natural rebound from stringent conditions," keen to exercise his new rights as regards timber, and inclined as a rule to look upon trees as an injury to the land; and with the timber merchant at hand and offering ready money, even calling on the owner of timber and tempting him to sell, the facts could not be otherwise than they have proved to be. The evidence given before the Committee was unanimous in the opinion that the bulk of the commercial timber in Irish woods is being rapidly worked out. In the words of one of the witnesses, the representative of a local wood-working industry which uses a great deal of timber, "everyone . . . seems to be offering timber now." The farms and estates in his district were being cleared of trees, and his firm were getting practically all the timber, immature as well as mature, and from both landlords and tenant purchasers. In the words of another Irish user of timber, if the tenant purchaser had only one tree he came in and wanted them to buy it. "When the tenant gets the land," said another, "he sells the timber because he realises some money and as he thinks improves his acres. He does not think anything of the timber. He will tell you so . . . We are buying from landlords and tenants every day, every week." Landlords could get a better price for their timber if they could afford to keep it and sell only the judicious thinnings and fellings in the local market provided by the constant demand for timber for building and repairing houses and farm buildings and by the Irish wood-working industries; but in present circumstances they have to let it go to the English or Scotch merchant who takes it away in the round. One of the Inspectors of the Estates Commissioners writes: "The axe and saw are never cool in their work of spoliation, which in some cases amounts to vandalism. The valley of the Blackwater, once notorious for the beauty of its wooded slopes, seems doomed to be dismantled of its attractiveness. When Kanturk was sold under the Ashbourne Act it was nesting in timber. The landlord reserved his right to the latter, and left nude stumps." "There are some landlords who employ foresters and they thin judiciously every year," said an industrial witness already quoted, "but what I complain of is that I find that in other cases it is not only the mature timber that is coming into the market,

*Influences of
Purchase Acts
operated by
other causes
leading to rapid
disappearance of
Irish woodlands*

Appendix 18 (1).

Galvin, 839.

Evans, 3001-10

McRae, 1190.

Newlands, 1860

16 1889-1.

Edwards, 4938.

Jermyn, 4653-4.

Appendix 18 (1).

Jermyn, 4653.

but that is swept away and the immature timber is swept away too. Whole woodlands are going down and they don't leave a tree behind, simply the grass is left." When tenants sign purchase agreements in cases of direct sales there sometimes prevails a doubt as to the respective rights of the vendor and purchasers during the interval between the signing of these agreements and the actual advance of the purchase-money, and this doubt has sometimes produced a combination or competition between landlord and tenant for the destruction of the wood. Mr. O'Regan, Chairman of the Clare County Council, at the conference of County Council Chairmen and Vice-Chairmen above referred to, said that in his locality he knew one estate where he himself "was connected with the arrangements for purchase, and where these arrangements have been going on for a year and a half, and both landlord and tenants are pulling all they can out of the wood in the neighbourhood, so that by the time the sale is actually completed there will be no wood left at all." Travelling saw-mills, set up by timber merchants, which proceed from wood to wood, remaining for a few months until the wood is cut down, and then moving to the next wood, are at the present time a regular feature in the countryside. "They come and plant down a portable engine and temporary mill in the wood," said a representative of a wood-working industry, "and they cut right away the entire wood. That is ruination to any industry that may be established." Over 200 saw-mills have been set up within the past four years.

PART I.
PRESENT
SITUATION OF
IRISH WOODS.

Appendix 22 (1).
Appendix 67.

Galvin, 880

Journn 4656

Appendix 61.

Replanting not being done.

14. In such circumstances little replanting is taking place. One of the most extensive timber merchants, who "has been through all the country north, south, east and west, and can speak from experience of actual surveys" told us that in the majority of the cases where he buys there is no replanting. "The land is left derelict." In his opinion the process of cutting without replanting is now going on at "a terrible pace. We shall soon devastate the country." One landlord who cut down 400 acres without replanting, and who has still 1,000 acres of timber standing, expressed to the Committee the feeling of insecurity on this subject which affects some of the larger owners. "The future is too dubious for us except in the case of one's own demesne." He has on his hands between 3,000 and 4,000 acres of plantable land. "Five years ago I thought I would plant it all, but then things turned up and I thought I would not get my money back. But what I planted is doing very well, and I have no doubt that in fifty years' time it will return a handsome profit. But I do not think it advisable now for Irish landlords to lay out money in that direction. I think it is distinctly for the State to take up this work instead of us. If they did there would be a handsome return in the course of time." When the timber is cut down the land where it stood seems in most cases to be turned to no other use; it becomes waste. "Practically all the places that have been cleared in our district," said a saw-mill owner from Armagh who had cleared many of them, "have no trees planted on them; they are lying there; they have not been utilised for tillage or grazing purposes but are lying waste." This statement summarises the general effect of the evidence of most of the witnesses on this point.

Landowners
deterred from
replanting.

Evans, 2947;
2977; 3006.

Villiers Stuart,
3411.

76 3413

Edwards, 4891.

Confirmation by Statistical Data and Special Inquiry.

15. The inquiries we have personally made in the country, and the inquiries that have been made for us by the officers of the Department of Agriculture and the Land Commission, the returns which have been specially obtained at our request, and the other data provided by the Statistics and Intelligence Branch of the Department, corroborate the impression produced by the above evidence, and establish the conclusion that the effects of the process described upon our woodlands are wasteful and destructive. Let us examine some of these data.

Evidence of
witnesses
confirmed by
statistics.

PART I.

PRESENT
SITUATION OF
IRISH WOODS.*Statistics of
planting.**Exhaustion of Woods without Re-stocking.*

16. The area under woodlands in Ireland is 306,661 acres. We find from the records* of planting operations that in the past fifteen years there has been in round numbers an average of 1,080 acres planted per annum. This is a wholly inadequate annual rate of planting for an area of 306,000 acres. But in recent years even this rate has shown a marked decline. In the five years 1890-1894, there were planted 7,175 acres and 15,370,839 trees, or an average of 1,435 acres per annum. In the last five years 1903-1907, there were planted 4,532 acres, and 9,458,573 trees, or an average of 906 acres per annum. These figures suffice of themselves to establish the serious fact of an inadequate and diminishing re-stocking of the Irish woods.

*Statistics of
Felling.*

17. Further evidence as to the exhaustion of the woods is furnished by the returns* of areas cleared and of felling operations. In the last five years the area cleared amounted to 7,424 acres, and the number of trees felled to 5,241,259, while, as already pointed out, the area planted amounted to 4,532 acres, the number of trees planted being 9,458,573. Thus in the last five years the number of trees felled has amounted to more than half the number of trees planted in the same period, whereas under a system of economic forestry, allowing for deaths, failures, and early thinnings, the trees planted should be at least four times the number of trees which are felled in thinnings and clearings suitable for commercial purposes. It may also be noted that in 1906-1907, the last year for which a record is available, the area felled and cleared amounted to 1,725 acres. This, excepting 1903, the year of the great storm, is the largest area cleared in any one year since 1890 when the returns of felling were first collected.

M'Ros, 1190
et seq.
Evans, 2942
et seq.
M'Ros, 1311.

Further, it should be borne in mind that the decline of the Irish woodlands is not to be measured by the shrinkage in area. The evidence given before the Committee points to the fact that a far more serious evil than a complete clearance has been the continuous "picking over" of so many of the Irish woods, or in other words, the cutting out of the best trees, while the inferior timber is left standing and the area still included in the return of woodland. Indeed, a good deal of even inferior timber must now be included in what is returned in the statistics as "fellings." In the opinion of more than one expert witness the majority of the woods are now in such a state from this cause that the only way of renovating them is to cut them down and replant them. They are bearing but from a quarter to half a crop. They have been described as "skeleton woods."

*Detailed Survey of King's County.**Condition of
Woodlands tested
by direct survey
tion.*

Appendix 16 (5).

18. The Committee, in order to test in every practicable way these and other features of the problem they were considering, decided to take one county in Ireland, and have a special detailed survey made as to the condition of its woodlands. They selected King's County as a typical county possessing the same percentage of woodland as the whole of Ireland. Of the 6,700 acres inspected, only 28 per cent. were found to be properly stocked, and no less than 47 per cent. of these woods were practically bare of valuable timber. Classified in another way, according to the ages of the various plantations, it was found that only 11 per cent. of the total consisted of woods under 25 years of age; 12 per cent. were between 25 and 50 years; 32 per cent. were between 50 and 75 years; and 45 per cent. over 75 years. In short, from this survey it is probable that nearly 50 per cent. of these woods have been partially cleared, are not being re-stocked, and are, in plain words, going into decay. Thus it will be seen that the woods of this county cannot possibly keep up a normal supply after the cutting out of the older timber has been completed. Comparing these results of an actual survey with the statistics for the rest of the country and the other facts cited above, they bear out the conclusion that a similar state of things is true of the other counties

* Agricultural Statisticians.

Increase of Saw-mills.

19. The special return which the Committee obtained of the increase of saw-mills further confirms this verdict. It shows that of 843 saw-mills in Ireland at the present time, 598 have come into existence since 1881; of which 349 started working between 1881 and 1903; and 249 between 1903 and 1907. In the same period according to the Census Returns the number of woodmen has decreased from 287 in 1881 to 220 in 1906. The large proportion of timber that is being exported in the round indicates that a great number of the recently established mills are of the class already referred to as temporary-mills utilised in connection with the clearing of woods and not for any manufacturing purpose. From whatever point of view we examine the question the same conclusion becomes clear.

Deterioration in Quality of Woods.

20. One other consideration suggested by the returns of planting and felling operations should not be overlooked. The Irish woods are not only being rapidly deteriorated, but the policy of spoliation itself is not yielding even at the present time a return in any way comparable with the crop of timber which should be obtained from an area of 306,000 acres under economic forest management. On such an area, assuming a rotation of 75 years, 4,000 acres should be planted annually and 4,000 acres cleared annually. And if the planting were carried out on an economic scale, such as that of 3,200 trees to the acre, it is a moderate estimate to assume an average yield of 800 trees per acre—including thinnings of over 20 years of age as well as final clearings—or in other words an average annual yield of 3,200,000 trees as compared with 1,392,600 trees, the number returned as felled in the year 1906-7. Thus the statistics bring out clearly two distinct points: first, that in comparison with the replanting of the woodland the existing rate of clearing and felling is excessive; and, second, that despite the fact that the woods are being depleted, the present average annual output of timber in Ireland is abnormally low and unprofitable. Under economic management there would be a much larger area restocked each year, and correspondingly a much larger annual crop.

Judicious and Injudicious Felling.

21. Of course, it must not be forgotten that some of the cutting which is being done is quite desirable. A large proportion of Irish timber is mature, much of it over-mature, and it is desirable that such timber should be felled. But the felling should be done on proper principles, and provision made for replanting. Similarly, a great deal of the hedgerow timber and other trees on tenants' holdings may be better out of the way. Some trees, like ash, with long spreading roots, are a serious injury to tillage. But we have evidence that tenant purchasers have cut down shelter belts of the greatest benefit to their own and adjoining farms. They are thus actually depreciating the value of their farms as agricultural holdings, and lessening the economic value of the district, as well as injuring the landscape. Once such belts are cut down it will take a generation to repair the loss and bring back to the farms the value these shelter belts gave them. Let us say at this stage, however, that we have had ample reason to believe that just as the landlords who cut down are impelled by circumstances over which they have no control—and in most instances are doing so with great reluctance—so the tenant purchasers are acting chiefly through ignorance of the real uses of trees on their holdings, and will develop a strong desire for the preservation and increase of trees when they are better advised upon the subject. In short, we believe that the feeling of the agricultural classes of the country, as represented by the tenant purchasers, the County Councils, and resident landlords, will prove to be very strong in favour of efforts to check the process which is now going on, and to advance forestry operations in the country. We shall refer to this subject again in Part V. of the Report.

PART I.
PRESENT
SITUATION OF
IRISH WOODS.
—
Increased
facilities for
timber felling.
Appendix 41.

Abnormally low
yield of timber

Appendix 44.

Discrimination as
to felling.

Bell, 3942-4.
Appendices 18-20

PART II.
EFFECTS OF
DENUDATION ON
INDUSTRIES.

PART II.—EFFECTS OF THE DENUDATION ON INDUSTRIES.

MESSAGE TO EXISTING IRISH WOOD-WORKING INDUSTRIES.

*Result of
present process
if not checked—
the closing of
existing industries.*

Appendix 59.

Fletcher, 2890.

Id., 2887

Id., 2893.

Id., 2938-34.

Flanagan, 5443,
5451, 5153.

Beckett,
4708, 4840,
4744.

Newman, 1882.

Jernyn, 4938.

Newman,
1832-3.

22. One of the most serious aspects of the present state of things is the menace it constitutes to existing Irish wood-working industries which are dependent upon the supply of home-grown timber. The inquiries of the Committee on this point have brought them in contact with a very suggestive feature of our industrial condition. They disclose the existence of a series of industries in connection with Irish woods, most of them situated in rural districts or country towns, all giving constant employment to considerable numbers of skilled hands, some of them of old standing, some developed in recent years by the enterprise of English manufacturers seeking new sources of timber supply in view of the growing shortage of timber in the world market, nearly all of them showing a readiness for further development, and all of them, without exception, giving expression to a feeling of alarm at the destructive processes in the Irish woodlands which they see going on around them. We had representatives of these industries before us from different parts of Ireland. To get the views of representatives who were unable to attend, and to supplement generally the evidence thus obtained we issued a circular of queries to owners of such industries. The statements we received, while varying from each other in some respects, are, with few exceptions, uniform on one point: They express the conviction that if the present rate of diminution of Irish woodlands goes on unchecked these industries will have to close their doors. These are the industries which employ Irish timber almost exclusively. They use it in chair-making, cartwrighting, coach-building, furniture making, packing-box making, the making of bobbins, spools, tool handles, in preparing timber for the building trades and the railway companies, and in various other forms of wood-working. The proprietor of one of these industries, whose business is extending, in getting a new lease prepared recently, told us that he would not take the lease for a longer period than fifteen years, as at the rate of cutting without replanting which he witnessed in his district, he estimated there would not be a supply of timber for this industry available after that period, and he would have to close it up. He estimated that of all the timber he had cut and manufactured there had not been over 35 per cent. of the land replanted, "which proves that in the course of fifteen or twenty-five years we shall have a scarcity of timber in the district, thereby causing the industry to cease, which has given employment to so many in Killeshandra since the year 1886." "I could take you round anywhere and point you out hundreds of acres cut away and never replanted." This witness's industry, which has been established over twenty years, pays in wages from £1,200 to £1,400 a year in a village of about 600 inhabitants. Mr. Flanagan, who employs 135 hands in a rural part of Westmeath, sees the same prospect. When he was a boy the woods in his district were so thick "you practically could not get in"; now there is "scarcely the sign of a tree there," and he has to go ten miles for his nearest timber. Mr. Beckett, who employs constantly forty hands in Ballina, County Mayo, must disemploy the most of them if planting is not done extensively. The plantations in his district are "nearly exhausted." This is practically the story of all the others; and the large English firms who have established branches in Ireland, like Messrs. Alesbury Brothers, in Edenderry, who employ 200 hands, and Messrs. Hobbies, in Athlone, who employ 150, express the same anxiety about the situation as the rest. Indeed, their representations are if anything more urgent and emphatic. They see their supply threatened, and unless the mischief is stopped they declare they must eventually close their works. The population of Edenderry is from 1,600 to 1,700; more than a fourth of the population, about 500 persons, are dependent on the employment given by Messrs. Alesbury's factory. If the process is not checked at once the evil will be irremediable. Several of the industries have not felt the shortage yet; some of them anticipate that it will become acute in six or

seven years; others see ahead for a longer period. Some of the replies to the circular of queries, which will be found in full in Appendix 59, are summarised below in a foot-note.*

PART II.
EFFECTS OF
DEPRECIATION ON
INDUSTRIES

Excessive export of Timber in the Round.

23. The export of timber which is taking place under these circumstances has attained the proportions of 72 per cent. of the total timber cut; and the most striking feature of the traffic is that practically all of this timber leaves the country in the round state, merely as trunks and logs, without any preparation being done upon it. Of the total number of trees cut (in 1906-7 the number was 1,392,609), about one million trees are annually exported, which is equal to 72 per cent. (If weight rather than number is considered this proportion might be somewhat lower, as a very large quantity of the timber exported consists of the younger trees which are used for pit-props. But the main accuracy of the figure is confirmed by the statistics of exports and imports; these show an annual export of about 193,000 tons, which in round numbers is the equivalent of a million trees.) Thus it follows that only about 28 per cent. of the trees cut in Ireland are used at home for manufacturing or other purposes. Of the amount exported, the quantity sent away in the round is 93 per cent. The representative of one of the English firms manufacturing in Ireland described this traffic as "frightful." "Every port in Ireland is getting chock-a-block with native timber going out of the country. In fact at the Spencer Docks sometimes merchants cannot get boats fast enough to take it away." Mr. Perry, a large Irish manufacturer, dwells on the same fact—"the quantity of splendid timber lying for months and months at the canal docks near the railway stations, which must be a great loss to the owners, who cannot get boats to take it away." The representative of another of the English firms manufacturing in Ireland said:—

Ireland's excessive export of unmanufactured timber.

Jernyn, 4649.

Perry, 632.

"The worst feature of all that the permanent saw-mill proprietor and native timber manufacturer has to contend with at the present time is the wholesale export of round timber, which is rapidly ruining his sources of supply and robbing the country of important labour-employing industries." Newnham, 2049.

This witness then proceeded to state from his experience that the cost of labour in rough conversion alone is 10s. per ton, and that for each ton exported from Ireland in the round there is thus a loss of 10s. worth of employment for labour in Ireland—an estimate which does not count the further amount that might be paid in wages if the wood were used in the higher processes of manufacture. But without entering into the complex calculation of estimating,

* Replies to query No. 4—"In the event of a failure in the supply of Irish grown timber, would your business be seriously affected?"

LEITCHER.—Firm No. 17—Most certainly, and very seriously; in fact, we will have to close. Firm No. 18—It must collapse. Firm No. 24—Yes, we might shut up our mill. Firm No. 25—Very seriously, indeed. Firm No. 27 and 28—It would have to be discontinued. Firm No. 28—My business would be destroyed, or certainly put in danger of being so. Firm No. 30—Certainly, perhaps may shut down. Firm No. 31—Yes, cease to exist in this country. Firm No. 47—Seriously affected, or perhaps fail altogether. Firm No. 48—Business would suffer seriously. Firm No. 49—Very seriously affected.

CONRAGHT.—Firm No. 20—To a very great extent indeed. Firm No. 32—Yes, very much. Firm No. 33—Most seriously affected. Firm No. 34—Yes, certainly. Firm No. 44—Very seriously. Firm No. 45—Must close our mill immediately. Firm No. 46—We would require to cease this department of our business.

MUNSTER.—Firm No. 11—Very seriously affected. Firm No. 12—We must close our mill. Firm No. 13—Indirectly we would be affected. Firm No. 15—Oh yes, very seriously. Firm No. 22—Most seriously. Firm No. 23—Yes, very much. Firm No. 33—Most certainly. Firm No. 41—Yes, practically ruined. Firm No. 42—It would crumple and kindred businesses over the county. Firm No. 43—Our business would be at an end so far as Ireland is concerned.

ULSTER.—Firm No. 2—Not only my business but the linen business of Ireland must be seriously affected. Firm No. 3—Very much so, indeed. Firm No. 8—Very much affected. Firm No. 38—Yes, our carts for boxes would at once rise. Firm No. 43—It would be very seriously affected. Firm No. 50—We would have to import foreign timber at an increased price. Firm No. 53—Yes. We can undoubtedly have home-grown stuff cheaper.

(For further replies see Appendix 59.)

PART II.
EFFECTS OF
DEPRECIATION ON
INDUSTRIES.

Weale, 3945.

Ferry, 725.

Dunn, 4408.

in relation to the cost of the raw material, the value of the labour expended in the higher processes of manufacture, it is important to note in this connection that one of the features of the timber industry at the present time in all the chief wood-exporting countries on the Continent and in the United States and Canada is the tendency to send the timber out in a more and more highly prepared state. These countries in twenty years have economised nearly 40 per cent. on their timber output by these methods.* This is due partly to the increasing appreciation of timber as a natural product in presence of the growing shortage of the world's supply; but it is also due to the desire of these countries to make the timber furnish as much employment as possible to their people before it leaves their shores. When one of the largest Irish manufacturers of timber products went to Norway to get 8-inch deals, and visited several saw-mills for the purpose, they refused to sell him the wood in that state, saying, "We want to give the labour of preparing that timber to our own people." The same point is brought out in the evidence of Mr. Dunn, the representative of two of the principal firms in the South of Ireland. The methods of these countries, in contrast with the state of things we are considering, are illustrated by our own imports as distinguished from our exports of timber. Our total imports of all classes of timber during 1906 in the hewn state and sawn state respectively were:—

Appendix 53.	Imports.	Lands.	
		Hewn	Sawn
		20,150	320,431
		8,651	329,082

Our exports for the same year, according to a careful estimate based on our export and import returns, were:—

26.	Exports.	Lands.	
		"Rough"	Sawn
		179,982	13,917

These figures are eloquent of the stage of economic development in which the timber industry has been allowed to stand in Ireland. No other civilised nation is content with so rudimentary a degree of handling upon its export of timber. To parallel these methods, it would be necessary to go to the undeveloped new countries where circumstances oblige the European Powers or traders exploiting them to do no more than simply cut down the timber and send it away.

*Injury to existing
Irish industries
from excessive
export.*

24. So strongly did one of the English witnesses already quoted feel as to the excessive export of timber in the rough and as to the danger it meant to his manufacturing business that he made a proposal which indicates the sharpness of the crisis apprehended by these industries:—

As a practical discouragement to the export of timber in the round, I would suggest the levying of a deterrent duty of at least a ls. per ton upon all such timber, the proceeds to be devoted to assist in a re-allocation scheme under State control. . . . There are some saw-mills and factories at present in England which are almost dependent upon Irish timber for their supplies, and if they found that they could not get it over to the other side as cheaply as they could get it and manufacture it in Ireland, I believe they would remove their factories from England, come over to Ireland, and give considerable employment to Irish labour. . . . I have in my mind now one firm, which is giving employment to 200 or 300 hands in England. If the price of timber was put up so as to force them to come over here, they would, rather than lose their present business, come over here and manufacture the timber.

Newham,
2048-53.

The improvement in the situation which he desired to bring about by this drastic remedy, this and other witnesses admitted might be effected in another way. The present excessive export of timber in the rough is mainly

* "The Americans have gone on improving their methods and machinery until now the bulk of American import consists of sawn woods and often boards already planed, and although it may appear an anomaly it is possible for the American merchant to ship planed boards into Liverpool cheaper than he could ship sawn boards, because of the reduction in the thickness of the board consequent on planing— $\frac{1}{4}$ inch. The saving in the freight consequent upon the diminution of the thickness is greater than the actual cost of planing; so you will see the whole tendency is to send the stuff over here as nearly manufactured as it is possible to do so."—(Q. 3946—Evidence of Mr. James A. Weale of Messrs. Williams, Weale & Co., timber merchants, Liverpool).

due to the excessive cutting of the woods, and the excessive cutting of the woods takes place because of the situation created by the Land Acts as described above, under which the vendor of an estate sells his woods in order to get ready cash from the timber merchant, whose interest is to cut down at once. If a Department of State or a local authority were in a position to buy these woods instead of a timber merchant, it could hold them, and only sell from the woods from time to time the necessary fellings of mature timber. This would check the abnormal process which is now going on, and secure for the existing manufacturer in Ireland his needed supply.

PART II.
EFFECTS OF
DEPLETION ON
INDUSTRIES.

Newman,
2069-71.
Jernyn, 4664.
Edwards,
4953-5.

IMPORTANCE OF PRESERVING EXISTING INDUSTRIES.

25. We shall again refer to the industrial and trade aspect of the problem.* We confine ourselves here to indicating the situation of the present wood-working industries as affected by the existing situation of the woodlands. When it is borne in mind how important it is felt on every side to be that new industries should be developed in Ireland, how great are the efforts that are being made to start them, and how difficult it is to re-start an industry once it has been destroyed, we feel that the prospect of these existing and, in the main, thriving industries, sharing the fate of so many of the past manufactures of Ireland, is one of great seriousness for the country. These industries, moreover, are of a type which it is most desirable to encourage in Ireland. They are usually situated in rural districts, some of them in poor districts, and they give employment which is wholesome from both the social and the economic points of view. The factor of these industries alone, if other considerations were not also there, would, in our opinion, justify the conclusion that the country should take measures to save the existing area of woodlands from further depletion and misuse, and for putting at least that area as far as may be possible on a proper economic basis.

Whether and how far she should extend that area is a question we shall presently consider.

PART III.—ARGUMENTS FOR A SCHEME OF AFFORESTATION CONSIDERED.

PART III.
ARGUMENTS FOR
SCHEME OF
AFFORESTATION.

DEFECTS IN THE PURCHASE ACTS.

26. The mischief indirectly being done through defects in recent legislation, the avoidable loss thus being caused to the country, and the urgent need of a remedy for this mischief, constitute one of the first arguments for taking up a policy of afforestation in Ireland at the present time.

It is manifest from the state of facts described in Parts I. and II. that there are serious defects in the Land Purchase Acts with respect to woods on properties coming under their operation. Our terms of reference restrict us to considering what relates to forestry only. Otherwise we should like to speak more generally of these defects in the legislation regarding land improvement of which the omission to deal with woods is but a part. As it is, the proper handling of the woods involves questions of drainage, roads, rights of access, and other matters of estate management, which, whether concerned with the woods or not, should be provided for in some way by the State when the land is passing from the hands of landlords. They are matters common to the estate, sometimes to more than one estate. They cannot be dealt with by individual tenant purchasers. Often these woods, drains, or embankments may have been created or improved with assistance from public funds. The security of the State itself, which is sinking so much money in the purchase schemes, to put it on no other ground, must suffer if these matters are neglected or abandoned. It is our view that when

Urgent need for
remedying loss
caused by defects
in recent legisla-
tion.
Duties of the
State under Land
Purchase Acts.
Preservation of
Woodlands not
provided for.

* See Part VI.

PART III.
ARGUMENTS FOR
SCHEME OF
AFFORESTATION.

*Acquisition of
waste lands for
forestry under
Land Purchase
Acts not
sufficiently
provided for.*

the landlord disappears, the State or some public authority on its behalf must take over his duties in respect of all matters of this kind, and arrange for the systematic discharge of them, if not perpetually, at least for a considerable period of time. With regard to the woods, at any rate, which pass from the ownership of landlords, our view is quite clear as to the duty of the State, and we shall make suggestions in this Report for dealing with them, and with such points of estate administration as may affect them.

27. The Purchase Acts have also failed to make due provision for dealing with mountain and other so-called waste land, not part of tenants' holdings, which is being sold with estates, and a considerable proportion of which would be suitable for the purposes of a national scheme of afforestation. No funds have been made specially available for the acquisition and management of these lands for forestry purposes. The consequence is that, like the woods, they are, under present circumstances, an embarrassment to the Estates Commissioners and the Congested Districts Board, who, when they come upon their hands, must allot them amongst the adjoining tenants unless they can be disposed of to trustees under sections 4 and 20. Such lands—beyond a fair take of rough grazing, which would very properly be included with the holding—are of little use or value to the tenant purchasers; but once they are passed over to them, the difficulty of getting them back again for public purposes would be considerable. The natural thing to do with such lands at the present time, if it be determined that a national scheme of afforestation is a wise and necessary undertaking, is for the State to take over such of them as are suitable for plantation. Whenever a forestry scheme was decided on by the State, it would be necessary to acquire such lands, however great the difficulty. To neglect the opportunity which the Purchase Acts now give the State, not so much of acquiring, for they come into the State's hands, as of retaining for public use large areas of these lands and to allow them to lapse into conditions of waste, would be an act of national improvidence repugnant to common-sense.

These are particular arguments arising from the present situation. The extent and nature of land suitable for forestry which is available now in the country we shall consider when we have examined the general question how far on general grounds a national scheme of afforestation is desirable for Ireland.

DESIRABILITY OF AFFORESTATION.

*Extent of forest
area required.*

28. The situation described in the preceding Parts puts it beyond doubt in our mind that the existing forest area of 306,000 acres of woodland ought to be maintained and put on an economic basis. The question now to be considered is, should our forest area be larger, and, if so, how much larger?

*Public opinion
as to adequacy
of existing area*

29. It is generally accepted by public opinion, supported by the judgment of authorities of various degrees of weight, that it is desirable to extend much further the forest area of this country. But in weighing the merits of so serious a national undertaking, nothing should be taken for granted; and we shall examine some features of the question.

*General
advantages of
forestry.*

30. The general advantages of forestry to a country have been so often dwelt upon, and dwelt upon in the case of Ireland, that we need not take up a great deal of space detailing them. Throughout the evidence and statements of the distinguished experts and experienced men, public and private, who can speak with authority on this subject, and who have kindly assisted us with their views, these advantages will be found fully discussed under every aspect—commercial, industrial, agricultural, climatic. We would refer to this evidence in the minutes of evidence and appendices; and as, not to over-weight the Report, we are obliged to omit here many details of great interest, we would express the hope that the information in the volume of minutes and appendices on this and other points will be carefully examined by all who seriously consider this question.

Modern Factors in the Problem.

31. There are, however, some particular considerations affecting this problem at the present time which have given the question of a native timber supply a greater importance and urgency than before. The world's supply of timber is decreasing, or rather the demand for timber is outstripping the pace at which it can be met. The evidence we have examined enables us to concur in the opinion expressed in the Report of the Departmental Committee on British Forestry that "the world is rapidly approaching a shortage, if not actual dearth, in its supply of coniferous timber, which constitutes between 80 and 90 per cent. of the total British imports." This is due to the increase of population and to the general development of industries, including processes of manufacture, such as the manufacture of paper from wood-pulp, by which timber is largely consumed. The industrial expansion of Germany has resulted in an increase of her import of foreign timber from £7,333,000 in 1895 to £13,176,000 in 1905. The United States, whose manufacturing industry has expanded enormously within the last twenty years is consuming her timber at such a rate, and destroying her forests so wastefully, that Government is taking alarm. Of the four great forest areas originally in the country, says one authority, two are practically gone, and the second and third are going. The lumbermen leave nearly half the crop in the woods to be burned. "A timber famine is coming in seven-league boots."† This danger of the exhaustion of the American timber supply was referred to in the last Presidential Message to Congress.‡ Canada's supply is also in danger, and is likely in future to be heavily encroached on by the United States. About a third of the supply of timber coming into the United Kingdom, or nearly £7,000,000 worth annually, comes from these countries.§ The consequence of this state of things is felt in the British market in the increase in the price of foreign timber, and in a deterioration in its quality. The prices of some varieties of timber have gone up 30 and 40 per cent. in twenty years; and, making allowance for the improved methods of manipulation, and for the fact that so much of the foreign timber now comes into the market in a highly prepared state, the net increase is probably more than these figures represent. All the timber merchants, British and Irish, of whom we asked the question, agreed in stating that the quality of the foreign timber is markedly inferior to what it used to be, a fact which indicates that the chief timber-producing countries are using up at home the best of their own supplies. Varieties of wood unknown twenty years ago, and "looking in almost all the properties that make timber valuable," are growing in their import, while the better species are diminishing in import. As these facts, the increase of the home as well as the foreign demand, and the excessive encroachment on their sources of supply, affect without exception all the timber exporting countries who are supplying the British market, it follows that the value of timber as a national asset must increase. There are other indications that timber as a valuable natural product is commanding greater recognition. Among

PART III.

ARGUMENTS FOR
SCHEME OF
AFFORESTATION.Shortage of
foreign timber
supply.

Nisbet, 2785,
2787-89.
Weale, 3984,
3989-90.
Munro-Ferguson,
4157.
Dean, 4399-403.
Fisher, 5003.
Squire, 5374.
Shannon, 5304-7.
Irwin, 3296-8.
O'Neill, 3553-6.
Appendices, 49,
52, 53.

Weale, 3995.

Perry, 703.

Henderson, 5079.

Shannon, 5305-6.

Jones, 4615-20.

Weale, 3995-6.

* Report of the Departmental Committee on British Forestry, paragraph 10. [Cd. 1319.] Reprinted, 1906.

† Address by Dr. T. E. Will at the Convention of the Packing Case and Box Makers at Catekill, near Chicago, last September, given in the documents put in by G. Perry, Esq., J.P. (Appendix 52). The statements in this address are interesting on the subject.

‡ "At present lumbering is the fourth greatest industry in the United States; and yet, so rapid has been the rate of exhaustion of timber in the United States in the past, and so rapidly is the remainder being exhausted, that the country is, unquestionably, on the verge of a timber famine, which will be felt in every household in the land. There has already been a rise in the price of lumber, but there is certain to be a more rapid and heavier rise in the future. The present annual consumption of lumber is certainly three times as great as the annual growth; and if the consumption and growth continue unchanged, practically all our lumber will be exhausted in another generation, while long before the time to complete exhaustion is reached the growing scarcity will make itself felt in many blighting ways upon our national welfare. The only trouble with the movement for the preservation of our forests is that it has not gone nearly far enough, and was not begun soon enough."—Extract from Message of President Roosevelt to Congress.

§ Since the above was written the following statement has appeared in the press:—

"The American (timber) supply will be gone in thirty years, and Professor Farnow, of Toronto University, a well known forestry expert, calculates that the present saw mill capacity of the United States could exhaust all the commercial log timber in Canada in less than fifteen years. So the Canadian Press is demanding that Canada's timber reserves should be protected from American exploitation, that the Government should control the denudation of forests, and that forest fires should be provided against."—Particulars from the *Montreal Herald*, quoted in the *Foreman's Journal* of March 20, 1908.

PART III.
 ARGUMENTS FOR
 SCHEME OF
 AFFORESTATION.

these are the development of bye-products, such as wood-pulp, artificial silk, woodyarn, certain acids, and the greater exactitude of measurements in the trade which, like the improved methods of manipulation is the outcome of a care to avoid waste that was not thought of when timber was more plentiful and less in demand.* It is impossible to avoid the conclusion that in a commercial sense the price of properly produced timber must be enhanced as time goes on, while in a general national sense the question of a native supply of timber becomes of greater consequence to every country. So far as Ireland is concerned, therefore, we are prepared to endorse the statement of the British Committee that the disposition of the area of land in the country which is suitable for afforestation, as well as the disposition of existing woodlands, is a "matter of grave national concern."† The facts above mentioned, moreover, make surer the opinion, in which all competent authorities concur, that where the conditions are suitable, a national scheme of forestry will prove a profitable investment for the State.

IRELAND'S PROSPECTS AND NEEDS.

Financial
 prospects of
 forestry in
 Ireland.

32. Are the conditions suitable in Ireland? The answer of the Committee is that, within the limits to which a scheme of afforestation must be restricted now, the conditions are decidedly suitable. Leaving aside the general advantages of forestry, we are satisfied that in a commercial sense timber can be grown profitably in Ireland on land of the right kind, provided the woods are managed scientifically and their product exploited on competent business lines. The rearing of the trees by the State and by private owners, the using of the timber for local industries, the trade of the wholesale merchant for the home or the export market, must all follow the lines of a comprehensive scheme of business organisation, understood and participated in by all concerned. When this is done—and we see no insuperable difficulty in its being done, if a national system for dealing with the whole subject is set up—the production of timber in Ireland can, in our opinion, be made a profitable industry in every sense to all who engage in it, and a beneficial investment for the country.

Data from Irish and British experience not a guide.

Woodlands
 hitherto not
 managed on
 commercial lines
 —no systematic
 book-keeping or
 scheme of
 management.

33. Speaking generally, woods in Ireland have never been managed on strict commercial and scientific lines; and for this reason their financial results cannot be taken as conclusive in this matter. There are some exceptions, but the rule is that private woods and plantations in Ireland have not been intended primarily for profit. Sport, amenities of residential places, landscape effect, shelter—these have been the chief objects for which woods have been created or kept up. Consequently there has been no systematic plan for continuous management and forest skill, which is the first essential of successful forestry considered as an industry, applied in the case of these woods. In the course of the minute survey made for the Department in five of the best wooded counties in Ireland, only in one case did Dr. Nisbet find anything like a definite plan of action forming a basis for the continuance of work from year to year. And seldom, too, even on the largest wooded estates, could the landowner or his agent, bailiff, or forester inform him off-hand with regard to the exact acreage of any given wood or plantation, or give such details as to revenue and expenditure, cost of planting, &c., as might be expected from those intimately concerned with the working of the woods. He says: "There being no regular scheme of management, the various works of thinning, clearing, and replanting, are apparently undertaken

Appendix B,
 par. 4.

* "Only a few years ago it was the common custom to measure English timber by girthing it with a string at its average diameter, doubling the string into four, which was taken to be the sole of a square piece the tree would make, and allowing an inch to every foot of the quarter girth for the bark. We have gone past that in English timber. They found on doubling the string there was a loss of 5 per cent. Then they used a tape in some cases. Now they use a steel tape, because they are making a dispute about the stretching in the tape by constant use. To-day it is becoming a common practice to make no allowance whatever for the bark, and prices are frequently quoted "tape over bark," so that buyers have to pay for bark as if it were timber, while it is the custom in oak logs imported here from the Continent to charge the buyer with atmosphere, an octagon log being measured as if it were square."—Q. 3967.—Evidence of Mr. James A. Wosley.

† Report of Departmental Committee on British Forestry, paragraphs 10 & 12 [C. 1313].

in a purely sporadic and mainly haphazard way." To this cause, unskilful handling, the work "being left to men who did not understand it," in addition to the exceptional circumstances of recent years, an experienced witness attributes a share of the present condition of the Irish woodlands, the bulk of which have been "run over" and wastefully thinned. Nor, despite their larger area of woodland, their vastly greater wealth and their total freedom from the shocks and insecurities which have affected the position of Irish landlords during the past half century, have the owners of woods in Great Britain much more useful data to show for the purpose of business forestry. There, too, other objects than profit have been kept in view, and, where this has been the case, the tendency has been not only to injure the commercial aspect of the woods throughout, but even to develop them on lines which almost render a profit impossible. In Great Britain, also, there is the same general absence of records and accounts covering the periods of the maturing of woods, so that an absolutely reliable statement on British forestry finance seems to be unavailable. The verdict of the British Committee is that "British forestry as now practised is inefficient;" and they add: "that foreign is so generally preferred to home-grown timber is in no way due to unsuitability of soil or climate, but is entirely due to our neglect of sylvicultural principles."⁸

PART III.
ARGUMENTS FOR
SCHOOLS OF
AFForestation.

ENGLAND, 1942,
2950

Some British and Irish Forestry Returns.

34. From the plantations, however, from which regular accounts were forthcoming for their examination the British Committee were able to draw favourable conclusions. Estimates, which they believed to be absolutely correct, "showed that excellent returns, even with indifferent management, have often been obtained from plantations formed on land of little or no value for any other purpose."* We may cite some of these instances here, from the appendices of the British Report, as they not only prove that forestry can be highly remunerative in these islands, but they indirectly illustrate the dearth of records which prevents us attaching to our Report British and Irish returns similar to those given for Continental forests. Appendix V. of the British Report gives particulars of a wood of 40 acres in the South of Scotland, growing at an elevation of from 650 to 1,000 feet, and on land valued at about 2s. per acre annual value. This wood produced, between the 80th and 75th years, timber to the total value of £2,955, which was estimated to represent a net annual profit of 8s. 2d. per acre. Appendix VI. gives data relating to a plantation of 18 acres in Yorkshire, growing on land worth about 7s. 6d. per acre annual value, and producing at the final felling at the 80th year £2,984. The most striking of the instances of profitable forestry are detailed in Appendix IX., and relate to the beech woods on the Chiltern Hills. These famous woodlands constitute a more or less connected series, and, as is well known, they gave rise to the extensive chair-making industry at High Wycombe †. The bulk of these Chiltern woods are entirely of natural growth, and for centuries have reproduced themselves from seed without artificial assistance. They thus more closely resemble many of the forest areas in central Europe than the majority of British plantations. The returns given to the Committee from these woods show an average gross yield per acre per annum, varying from 15s. to £2.4 from which the low costs of maintenance remain to be deducted. Owing to natural regeneration, the costs of maintenance in these woods amount to little more than the payment of rates and taxes and the upkeep of fences.

*Instances of
successful forestry
in Great Britain.*

35. Before our own Committee Mr Munro-Ferguson, one of the largest owners of forests in these Kingdoms and chief of the very few who have managed them on commercial lines, quoted some of the results of his experience. In the case of two blocks of wood, on one the final crop was

*Average returns
per acre from
British Wood-
lands.*

* Report of Departmental Committee on British Forestry, par. 7, 10, 12.

† For particulars as to the wood-working industries of High Wycombe and the Chilterns see Appendix 63 to present Report.

‡ Mr. A. M. Brown, reporting to the Surveyor's Institute, placed the figures at £3 annually.—*Journal of Forestry*, January, 1908, "The Yield of Beech Woods," by Sir Hugh Beevor Bart.

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ARGUMENTS FOR
SCHEME OF
AFFORESTATION.

Munro-Ferguson,
4160 and
Appendix 24.

Fisher, 4507.

Munro-Ferguson,
4153.

Records of State
Forest
Departments.

Average returns
per acre from
Continental State
Forests.
Appendices 45,
47, 49

Fisher, 5505 et seq.

valued at about £180 an acre, the previous thinnings being equal to about £40 an acre. On the other, a higher piece of ground, the final crop on a final felling, 290 trees to an acre (averaging 70 cubic feet per tree), would realise £157 10s. an acre; previous thinnings were about £30 an acre. The net profits here amounted in round figures to 40s. and 35s. an acre respectively. This was on land of not much use for anything else and worth about 6d. an acre for grazing. More valuable land would yield better results; in the case of forestry as well as agriculture the better the land the better the crop. Mr. Munro-Ferguson would fix the limit at which it would pay to put land under timber roughly at land worth up to five shillings an acre, though it is difficult to lay down a hard and fast line. He has known land fit for agriculture that would pay better under timber than agriculture, and this experience corresponds with that of other owners and forestry experts. Mr. Fisher, in his evidence, quotes instances of a larch wood in Wales which produced £91 per acre net at fifty years old, and of a larch wood seventy-five years old in Yorkshire which produced £157 10s. net per acre, and he mentions in appendix 54 a crop of larch in county Wicklow which realised £93 net per acre when seventy years old. Mr. Forbes, who has managed woods in Wiltshire and Somersetshire, has found plantations in average situations and on average soils yield a net annual profit of 10s. an acre.

Apart from these instances, we are informed that the experience of all competent foresters throughout the United Kingdom supports the conclusion that large, well-managed plantations, growing on land of average quality, are capable of producing a net revenue of from 10s. to 20s. per acre per annum after a sufficient time has elapsed to secure a regular succession of mature fellings. Mr. Munro-Ferguson, from his own experience and his great knowledge of forestry in these countries and abroad, has formed the emphatic opinion that forestry would be a sound investment for State funds "anywhere in the United Kingdom," and that the conditions of Ireland, with which he is well acquainted, are exceptionally favourable for such an investment.

Continental Forestry Returns.

36. But the most reliable data and the best experience regarding woodlands are those of Continental countries in which State Forest Departments have been in existence, keeping records, for at least a century. In these countries, moreover, forestry has been carried on as a systematic industry by the State and private individuals to a vast extent and under every variety of conditions. They differ from each other a good deal in circumstances; some differ very much from Ireland, some in many respects resemble her; some are bigger than Ireland, some smaller. But the experience of all with regard to forestry is that it is a valuable national asset, worth preserving and extending, and that, apart from its other national advantages, it gives a direct net profit to the State on the money invested in it. France, Switzerland, and the various States of the German Empire, furnish the most instructive examples of successful State forestry. These countries owe the satisfactory condition of their forest properties to a variety of circumstances, but chief amongst them must be placed a continuous policy of conservation and extension, which has been adopted for the last two or three hundred years. This policy has resulted in the development of a high standard of administrative and technical skill in forest management and utilisation, and has been invariably accompanied by the creation of a healthy public opinion on forest policy generally, all of which are necessary features in securing the best possible results from State forestry in countries with large agrarian populations.

37. Various data regarding the financial conditions of many Continental State Forest Departments are given in the Appendices and in the Minutes of Evidence accompanying this Report. It is unnecessary to quote them in detail here. They show that forests managed on strictly commercial lines give a net annual return of from 10s. to 20s. per acre on the average. In some cases the net profits run to a very high figure. For one Swiss wood mentioned in the appendices the net returns for the year quoted were over £3. In the Vosges Mountains some of the French forests yield net revenues of £2 15s. per acre. Professor Schlich, in his evidence before the British Forestry Com-

mittee, gives instances of successful forestry in the Saxony State forests, in one of which, where the species grown were 93 per cent. spruce, the receipts per acre were 48 3s. per cent. and the expenses 10 3s., the net annual receipts being 38s. per acre.* Where the returns fall below the average figures of 10s. to 20s. per acre, it is invariably found that the forest areas to which they refer are exceptionally large, and, consequently, contain a great proportion of unproductive or only partially productive land, or that large sums are being spent in extension and improvement, which temporarily reduce the average net yield per acre. Instances of this latter cause may be found in Prussia and France, in the former of which a sum of £200,000 was allocated in the year 1905-6 for the acquisition and planting of waste land, while the extensive plantations on the sand-dunes of the Landes in Gascony, and the formation of "protective"† plantations on mountain slopes has involved an expenditure of many millions of francs by the French Forest Department during the past century‡.

It is of interest to note that some of the highest returns from forestry in Europe are obtained by the smaller German States, such as Saxony, Baden, Württemberg, which possess on the average a State Forest area of from a quarter to a half of a million acres. These areas are similar in size to the area of woodland, which our inquiries indicate might be ultimately obtained in Ireland with the aid of a properly equipped and endowed Forestry Authority.

Suitability of Irish conditions for Timber-Growing.

38. Does Ireland in soil and climate differ from these countries in any way which should make her less adapted for forestry? On the contrary, the fact seems to be that in so far as she does differ, the difference is in some respects in her favour. The evidence we have had before us supports this conclusion.

All the men of experience and expert knowledge are agreed that, in soil and climate, Ireland for forestry purposes is particularly well favoured, and that she can grow, and has grown, some of the finest timber in Europe. Her humid air, and mild and equable temperature,—conditions which she derives from her geographical and physical situation—are the conditions most desirable for tree growth, those which in her natural history determined that in the past Ireland should be mainly a wooded country. The great places in Ireland where arboriculture has been fostered, the demesnes and gardens of Castlewellan, Fota, Coolatin, Baronscourt, Powerscourt, and other places have given results in variety and luxuriance of tree-growth which are most remarkable. The evidence of Mr. Munro-Ferguson and Mr. Henry should be read on this point. Mr. Munro-Ferguson considers that the climate of Ireland is better for forestry than that of Scotland, and he believes that Ireland, on account of what he regards as her exceptional advantages in this respect, might make a speciality of tree nursery gardening, for the supply of other countries as well as herself.

On the question of her capacity to grow the timber as well as any other country in Northern Europe there can be no doubt whatsoever.

Value of General Results of Forestry to certain small Countries.

39. We have been considering so far only the direct commercial returns of forestry. But the agricultural and industrial States of Europe attach greater importance to the wider and less direct results of forestry, to its great influence upon the general prosperity of rural districts and industries, and to its social, economic, climatic and other national bearings. And they all, on these as well as commercial grounds, show a marked tendency to increase their appreciation of forests as an element of their national wealth. It is worth looking again at some of the smaller countries in this respect. The following five countries are all of them much smaller than Ireland, and one of them,

PART III.
ARGUMENTS FOR
SCHOOL OF
APPROPRIATION

*Suitability of
Irish climate and
soil.*

Nisbet, 2616,
Munro-Ferguson,
4123, 4342-5;
Fisher, 3512-3.
Fisher, Appendix
51.
Henry, Appendix
32.
Henry, 4028.
Wehler, 3563.

Munro-Ferguson,
4219-23.

*Indirect as well as
direct advantages
to Ireland from
forestry.*

* Departmental Committee on British Forestry—Minutes of Evidence [Cd. 1565], 1903, Q. 3273.

† The term "protective" is generally applied to woods which, by their situation on the banks of torrents or on mountain slopes, provide protection against hostile climatic influences, against avalanches, landslips, extraordinary accumulations of water, &c.

‡ The value of the State Forests in France and Prussia according to the returns for 1905-6 was as follows:—France: gross revenue, £1,221,200; expenditure, £357,200; net revenue, £864,000. Prussia: gross revenue, £1,987,550; expenditure, £2,469,205; net revenue, £2,469,545. The cost of administration and of forestry education included in the expenditure is respectively: in France, £268,260; in Prussia, £877,320. See Appendix 47.

PART III.
ARGUMENTS FOR
SCHEMES OF
AFFORESTATION.

Appendix 49.

Denmark, almost exactly resembles her in economic conditions. Denmark, with an area of 9,500,000 acres, as against Ireland's 20,850,725 acres, has 682,823 acres of forest, or over 7 per cent. of her total area; Holland, with a total area of 8,038,000 acres, has 633,775 acres, or 8 per cent. of forests; Belgium, with a total area of 7,277,000 acres, has 1,260,453 acres, or 17 per cent. of forests; Saxony, with a total area of 3,600,863 acres, has 929,433 acres, or 26 per cent. of forests; and Wurtemberg, with a total area of 4,715,000, has 1,451,203 acres, or 31 per cent. of forests. The fact that Denmark, an agricultural country with only half the area of Ireland, and with already more than four times Ireland's percentage under timber, has increased her forests by 175,000 acres since 1881, and that Belgium, with her still smaller area and vaster proportion of woodland, and her dense agricultural and industrial population, has added 70,000 acres to her forests in the same period, seems to us very significant as showing the determined appreciation by these countries of the importance of a native timber supply. If this policy be sound for these countries, it is not unreasonable, in all the circumstances, to suppose that it should be equally sound for Ireland; and, if she only has the land to spare for the purpose, the devotion of, say, 5 or 6 per cent. of her total area to securing a supply of home-grown timber would appear to be no more than a very modest aim for any policy of the kind. This would mean a forest area of from 1,000,000 to 1,500,000 acres.

Ireland's needs in respect of Timber Supply.

Requirements for
which home-grown
timber should
meet.

40. What are Ireland's needs in the matter of timber which she might aim at meeting from a home-grown supply? They may be indicated in a general way by the definition of the objects of a national scheme of afforestation which we set out by adopting:

The maintenance directly or indirectly of an area of woodland sufficient to produce the supply of timber required by the country for domestic and farming purposes, for the development of industries and commerce essential to its prosperity, and for providing shelter needed for successful agriculture.

To give a more particular answer to this question is impracticable. The more Ireland develops industries in which wood is used, the more she raises her standard of comfort, the higher these needs will rise. She might, if she had the land to spare, go in besides for an export trade in timber, which would bring them higher still. There is, however, one point of view from which this question may be looked at more definitely. To conduct her agriculture and her industries and to maintain the life of her people at a normal level of efficiency and comfort, a nation requires to consume a certain quantity of timber. How much timber does Ireland consume? And how much for this purpose ought she to consume? The consumption of wood in Great Britain, taking the home production and the net surplus of imports over exports, is estimated at 17 cubic feet per head of population; in Germany it is 19 cubic feet per head of population; in France it is 24 cubic feet; in Holland 22 cubic feet, and in Denmark 26 cubic feet. In Ireland at present, taking home production and the surplus of imports of timber over exports, it amounts to only 5 cubic feet per head of population.* This is a striking contrast. Yet every close student of Irish economic conditions will confirm from his observation the fact which these figures indicate, that there is far too little timber used in Ireland. The condition of large numbers of the houses of the people, the condition of the farmsteadings, of the fences and gates, of the shelter for cattle and for crops (even after allowing for a climate which permits of cattle being kept out of doors to a greater extent than in most countries), afford abundant evidence of this fact; and what is true of the domestic and agricultural side, is true also of most of the industrial and transit equipment of the country. Our efficiency in all these respects, as well as our standard of comfort, is yet a long way below the normal level. If we make all allowance, then, for the greater requirements of

* These estimates of the per capita consumption of wood are based on calculations made from the estimated annual home production of timber, the excess of wood imports over exports, and the population. The latest figures available were used in each case.

more developed industrial States, and allow for the naturally larger use of timber as fuel in many European countries, it is still evident that Ireland, if she is to advance in efficiency and prosperity, must consume a very great deal more timber than she does now; we would put it at at least double the amount. That would be 10 cubic feet per head of population. That figure is under the mark, and it leaves room for much expansion in the general home demand, and in the special demand for wood-consuming industries, if these be developed in Ireland; but even if an average consumption of 10 cubic feet per head of population is to be met from home-grown supplies, it would call for a woodland area of from 1,000,000 to 1,200,000 acres to meet it. Should Ireland also want to keep up her export of timber, the area would have to be correspondingly larger; and there is a further source of demand to be taken note of, a demand for timber for fuel, which will develop eventually in many districts as the local bogs become exhausted.

41. Taking all considerations into account then—including the fact that a forest crop does not become economically marketable for a long period, and that all that can now be provided for by new planting is the demand for timber from twenty to fifty years hence—we feel safe in concluding that an area under woods of 1,000,000 acres, consisting of such land suitable for planting as cannot be more profitably employed in agriculture, should be regarded as affording not more than a moderate insurance for the agricultural and industrial needs of the country in the matter of timber; and that Ireland will not be managing her business as a prudent nation if she does not take every measure open to her at the present time to establish at least such a forest area.

PART III.
ARGUMENTS FOR
SOURCES OF
AFFORESTATION.

Woodland area
required.

PART IV.—THE LIMITS OF AFFORESTATION IN IRELAND.

THE COMMITTEE'S INVESTIGATION.

42. In considering a national scheme of afforestation one of the first things to be ascertained is the extent of land in the country available for the purpose. Taking the land under existing plantations, to begin with, what further land is there in the country suitable for afforestation and not so suitable for anything else? The Committee from the outset used all their endeavours, with the assistance of the Department of Agriculture, the Land Commission and the Congested Districts Board, to get at a practicable answer to this question. All the time their sittings for evidence were going on, and up to the date of preparing this Report, an investigation into this subject was proceeding. They had before them already results of the comparatively detailed forestry survey made by Dr. Nisbet, for the Department of Agriculture, in the Counties of Wicklow, Wexford, Carlow, Kilkenny and Waterford, and of a less detailed inspection made by him in the Counties of Cork, Limerick, Tipperary, King's County and Queen's County. They had, further, the results of surveys made by Mr. Forbes from time to time since 1906. On the establishment of the Committee, Mr. Forbes, being placed at their service by the Department, was requested to conduct, with two other officers, an investigation in the country of a detailed nature in some districts, but of a rapid and general character in the main, with a view to forming a fairly accurate notion within a comparatively short time of the extent of suitable land. The Inspectors of the Estates Commissioners and the Congested Districts Board dealing with the work of purchase and re-sale of estates throughout the country, were also instructed by their respective Departments to furnish the Committee with reports on the subject. Inquiries were, at the same time, sent by the Committee to landowners, agents, valuers, surveyors, members of the Irish Forestry Society, and representative men of different descriptions throughout the country who were in a position to have direct knowledge on this matter. A good deal of the information thus obtained is tabulated or summarised, with maps, in the appendices. Part of the inquiry consisted of an endeavour to obtain direct offers of suitable land with a view to testing the actual feasibility of such transactions at the present time.

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Amount of land
available. The
Committee's
investigation.

Appendix
15-20.

Appendix 16.

Is. 15.

Is. 17-19.

Is. 20.

Is. 16, 43.

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*Detailed survey
recommended.*

Appendix 16.

43. Such an investigation as the above cannot take the place of a complete survey in detail, which it should be the first work of a Forestry Section to carry out, and which, to do thoroughly, would take more than a year. But the results of the part of the work which was done more or less in detail, bringing within reach of our hands in three months definite transactions for the sale, mostly without incumbrance and at reasonable prices, of more than 20,000 acres of suitable land, furnish a suggestion of what more extensive work might be expected to produce, and, at the same time, furnish data of use in forming estimates suggested by the rapid general survey. Moreover, an examination of the agricultural statistics leads to an estimate of the suitable land available, which roughly corresponds with the estimate resulting from this general survey. While, therefore, this estimate cannot be put forward as at all a substitute for what it should be the duty of a Forestry Section to produce, every precaution has, nevertheless, been taken as far as time and opportunity permitted us, to bring it as near the mark as possible, and we feel confident that the thorough survey which must afterwards be made will show that it is fairly close to the facts, and certainly does not go beyond them.

Land available for Plantation.

*Previous estimates
extensive.*

44. One broad conclusion from our inquiry is, that the amount of land now available in Ireland for forestry purposes is much less than is generally supposed, or than has usually been estimated by previous inquirers. A reason for this is that previous inquirers had not the data before them which recent legislation and other causes have made available for us, and that even such a rough investigation *ad hoc* as we have made, was not attempted by them. Another reason is, that the greater part of the barren mountain land which would not now grow trees successfully, has been usually included in these estimates. Finally, a great deal of the land available then which would have been more suitable for forestry than agriculture has now passed into the hands of tenants or tenant purchasers, by whom it is used as poor pasture, and may be regarded, for immediate practical purposes, as unavailable.

Mountain land.

45. The mountain land of Ireland for the most part consists either of land covered with wet peat, land with a surface of bare rock, or land with little or no peat and usually with a surface of gravelly soil.

*Distribution of the
mountain land.*

Appendix 18.

46. The peaty and rocky types of land predominate in the north and west of the country, and, in the main, are more or less unsuitable for forestry purposes. The hills of Antrim, the Sperrin mountains in Londonderry, the Donegal highlands, the mountain ranges of Mayo, Galway, Leitrim, Sligo, all possess large areas of peaty land, interspersed with masses of bare rock, constituting waste land in the fullest sense of the term. But there is also some of the land having gravelly soil with little or no peat in these counties, and, on this, forestry is possible to some extent. Ardara and Letterkenney in Donegal, the Glens of Antrim, the Mourne Mountains in Down, Tubbercurry in Sligo, Manchemilton in Leitrim, Leenane in Galway, are instances, amongst others, of districts in which such lands occur.

The mountain land in the counties of Clare and Kerry, and South-west Cork is fairly equally made up of all the types, and a third of the whole may be regarded as plantable. In the counties of Waterford, Tipperary, Carlow, Wexford, Wicklow, and parts of Cork the mountain land generally belongs to the more favourable type; peat is confined to the higher elevations, and the surface is more uniformly covered with timber-growing soil. In all of these counties the possibilities of afforestation are great, and probably from 10 per cent. to 20 per cent. of the entire surface of the mountains might be profitably utilised in growing timber. Plantations already formed on such land have succeeded in most cases.

47. In general, it would seem that the suitability of mountain land for planting purposes decreases as the western coast line is approached—a fact partly due to the greater deposits of peat in that direction, and partly to the

influence of the westerly winds—whereas mountain land in the east and south of Ireland is, taken as a whole, suitable for afforestation.

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Extent and character of available land.

48. How much land in the country, then, seems to be available for forestry purposes? Two classes of land must be barred out in forming an estimate:—

*Classes of land
excluded from
Estimate.*

- (1.) Land which would pay better for tillage or pasture;
- (2.) Land which, from its exposed position or its altitude, or the character of the ground, would not grow trees successfully at all, viz. genuine waste land.

49. The land resulting from this elimination furnishes the area available for forestry. This area is found amongst the mountains, as above indicated, and also on land which is not mountain land. In the latter case it consists mostly of land which is covered with heather, gorse, bracken, and other growth, which destroy the greater part of its grazing value, and render it of little service to the owners or occupiers. The area of land suitable for forestry may be found in blocks which may be classified as follows:—

Classes included.

- (a.) *Large blocks of 500 acres and upwards of mountain land comparatively free from occupied holdings, and unsuitable for agriculture.*
- (b.) *Moderately sized blocks from 100 to 500 acres of inferior pasture or mountain land, chiefly attached to larger holdings and demesnes.*
- (c.) *Small areas of under 100 acres of rough and semi-waste land interspersed with arable and pasture, and uniformly distributed over the country.*

The land in (a) and (b) must be the chief subject of forestry operations on a large scale. The large blocks in (a) would form the area for State forests, planted and managed directly by the Forestry Authority. The land in (b) would be mainly dealt with by the larger holders of land and County Councils, both working in co-operation with the State. The smaller areas comprised in (c) are scattered in large numbers throughout every county. They arise not only from the inferior character of the soil itself, but also from the sub-division of the land creating corners and small patches which are of inconvenient shape for cultivation or pasturage, but which might be profitably utilized for growing timber. Instances of this class of land are found in ravines and the steep banks of watercourses and rivers, land from which peat-bog has been cut away, marshy land difficult to drain, and ground covered more or less with boulders or outcrops of rock, while every farm contains corners and strips of waste land, the planting of which would not decrease the agricultural area, and, on the other hand, would provide shelter and ornament, and, in many cases, profit to the planter.

*Classes (a), (b),
and (c) combined.*

Our inquiries have led us to the conclusion that, apart from existing woodlands, at least 750,000 acres of land suitable for planting are available in the three forms. In (a) we estimate there are from 200,000 to 300,000 acres, and the remainder in (b) and (c).

50. We are satisfied that this estimate is well within the mark. Dr. Nisbet, from his survey in 1903, estimated that one-fifth of the mountain and inferior pasture in the counties of Wicklow, Wexford, Waterford, and Kilkenny might be profitably planted. A special survey of the Wicklow Mountains, made by Mr. Forbes in 1907, indicated that at least 10 per cent. of the land in class (a) existed in that region in a suitable form for State afforestation. The inspection of the chief mountain districts in Ireland made on behalf of the Committee confirmed the opinion that from 5 per cent. to 15 per cent. of these districts were plantable, exclusive of the legitimate agricultural land. The special returns made to the Committee by the officials and inspectors of the Department of Agriculture, Congested Districts Board, and the Estates Commissioners, together with the returns made by land-owners, estate agents, and others have elicited the fact that from 5 per cent. to 10 per cent. of the whole of Ireland, exclusive of the 1·5 per cent. of the

*Dr. Nisbet's and
Mr. Forbes's
estimates.*
Appendix 15.
Nisbet, 2469.
Appendix 16.
ib., 18-20.

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IN IRELAND.

existing area of woodlands, is regarded by men exceptionally well acquainted with the condition of the land as being better adapted for forestry than any other purpose. Allowing, therefore, for any difference of opinion on this point, it seems safe to conclude that at least 5 per cent. of the entire country, including the 1·5 per cent. of existing woodlands, or a total of at least 1,000,000 acres, might be devoted to forestry without involving any disturbance of existing agricultural industries.

Total area available for forestry.

51. In other words the estimate we may base on the above examination is that there are available, in round numbers, in the different classes of land suitable for plantation and not so suitable for any other use some 700,000 acres; or with the 300,000 acres of existing woodlands

A total possible forest area of 1,000,000 acres.

The total may, in practice, be somewhat more or somewhat less, but we take this round number because we are not in a position to make a more exact estimate and because we believe that it is on the safe side.

Confirmation of Estimate from Agricultural Statistics.

Exclusion of small holdings from Estimate.

52. This estimate, moreover, resulting from surveys and inquiries, finds support from the agricultural statistics. Economic forestry can be practised only on large areas, the lower limit of which is fifty acres. Leaving aside small clumps for shelter or the like, this means that we cannot regard holdings under 100 acres as furnishing any of the area for economic as distinguished from what may be called domestic forestry. These small holdings, which occupy 12,000,000 acres or three-fifths of the whole country, have to be left out of consideration. The area must be found on holdings running from those above 100 acres to the large mountain tracts. According to figures* furnished by the Statistics and Intelligence Branch of holdings of 100 acres and over, if we exclude (1) the area under crops and rotation, and (2) the area at present under woods and plantations, there remain, on lands within the view of forestry, the area of permanent pasture amounting to 3,315,836 acres and the area of mountain land amounting to 1,821,760 acres.† Of the permanent pasture 80 per cent. may be deducted as necessary for agriculture, which leaves 663,168 acres, and of the mountain land 90 per cent. may be deducted as unsuited for economic afforestation, leaving 182,176 acres, or a total of 845,284 acres, as available for planting purposes throughout the country. Therefore, without touching the 12,000,000 acres of small holdings at all (on which tree-growing can certainly be developed to a limited extent if encouraged and assisted), we find that the provision of the 700,000 acres regarded as necessary for forest extension, in addition to the existing woodland area, would involve the acquisition of less than 14 per cent. of the permanent pasture and mountain land on holdings of 100 acres and over. The bulk of these new woodlands will, for natural and economic causes, be on the large holdings, and it may be expected, in the event of suitable encouragement being given towards the work of afforestation, that the percentage planted will increase with the area of the holdings. The statistical evidence confirms us in taking, for the purposes of this Report, the round figure of at least 1,000,000 acres as our working estimate for the extent of the Irish forest area.

The Problem to be worked out.

Scope of Scheme.

53. We must assume a limit as a working hypothesis. In practice it may not be found possible to reach that limit. The proportions of the respective areas classified in the scheme may not be observed. Some may take a

Size of Holdings.	Number of Holdings.	Total Area of Agricultural Land Acres.	Permanent Pasture, Acres.	Mountain Grazed Land, Acres.
* 100 to 200 acres,	22,936	2,765,246	1,607,995	327,338
200 acres and over,	9,769	3,086,703	1,617,541	1,067,336

—(Compiled from statistics furnished by Department of Agriculture.)

† Of this area of 1,821,760 acres of mountain land 1,384,674 acres were returned as "grazed," while the area of "ungrazed or barren mountain" on holdings over 100 acres has been estimated at 437,086 acres.

longer period to be got in hand than others. The area for the State Forest on mountain land may be acquired in ten years. The area of (b) and (c) land may take a much longer time to come into the scheme. But in considering a forestry scheme we have to take a long period of time into our ken, forty to eighty years; and at the earlier part of that period we have to reckon with tendencies, those produced by the land transfer legislation, which make it inevitable that the State must at once enter upon this task to some extent, and to deal with considerations which make it probable that the full extent of the scheme will have to be contemplated.

Assuming the limit which the previous estimate has suggested to be possible, this, then, is the problem to be worked out:—

The proper utilization, through private owners and County Councils, of about 300,000 acres of existing woodlands;

The creation of a State forest on between 200,000 and 300,000 acres of mountain or other rough land in large blocks to be specially acquired for the purpose and directly managed by the State;

The planting of a further 500,000 acres, chiefly in comparatively small blocks, through private owners and County Councils;

Thus establishing within a period of about eighty years an ultimate forest area in Ireland of at least 1,000,000 acres.

PART V.—A NATIONAL SCHEME OF AFFORESTATION.

A TASK FOR THE STATE.

54. It is important to have it clearly established that, if this work is to be done, action must be taken primarily by the State. A national scheme of afforestation cannot be undertaken by private individuals. The resources and equipment of private owners in Ireland, even if these owners were in a very different position from that in which they stand in respect of their woodlands, are quite insufficient to undertake such a scheme; and such help as can come from them in the preservation and development of the existing woodland area can be effective only if it is given in close co-operation with a scheme managed by the State. The reasons for this are well understood, and are put beyond question by the long experience of all countries in which forests are dealt with as a national asset. They are endorsed by the British Committee on Forestry* and by all persons of authority who have spoken and written on the subject. First, the capital outlay required for extensive investment in forestry is too great, and the time during which that capital must remain locked up before it brings a return is too long for the investment to be within the scope of any agency but that of the nation as a whole; second, forestry conducted on scientific and economic principles, commercial forestry, requires as an absolute condition of its success continuity of management for a very long period, a scheme settled and carried out for at least eighty years. That condition cannot be secured by the private owner, who has no guarantee that his successors may not entirely disregard, or fail to carry out, the principles of his scheme; and whose successors, moreover, are subject to temptations such as those connected with succession to property, which are dangerous to settled schemes of forest management. The State is a proprietor who never dies; and a State forestry department alone can secure that through succeeding generations a plan laid down for the development of a large forest area can be systematically followed out. In countries where the management of forests on regular principles has become as traditional with the people as the management of agricultural crops, private owners as well as the State may be relied on to observe these principles, no less in one case than in the other. Yet even there, but for the working of State forestry schemes beside them and the opportunity of co-operating therewith, it is doubtful whether the private owners could manage their woods so successfully. There is a third reason why this is a subject for the action of the State. The returns to the private owner, and his successors, from the outlay of his capital

PART IV THE LEGISLATION OF AFFORESTATION IN IRELAND.

Forbes, 119.
Nisbet, 2749-75;
2790.
Webber, 3539;
Munro-Ferguson,
4158-9.

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Necessity for State action.

Villiers Stuart,
3413.
Montagu,
2518-20.
Brown, 2402-5.
Nisbet, 2760-72,
2790.
Dalap, 3705.
Munro-Ferguson,
4292, 4154-5.
Dunally,
5247-8.
Eggle, 5573,
5584.
Flanagan, 5474-5.

Appendix 45 (3).
A, 47.

* Report of Department's Committee on British Forestry, paragraph 10 [OL. 1319].

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are restricted to the commercial profit realised on the investment. The far more valuable indirect returns, economic and social, go to the community as a whole, and he cannot be expected to take these into account as a reason for looking up his capital from investments producing earlier and perhaps larger cash returns.

Exceptional obligation on the State in Ireland.

*Responsibility of
State in Ireland in
view of past
neglect and present
legislation.*

55. These are general reasons for State action which we think it well to mention here. But in Ireland there are special and peculiar reasons which put the idea of any other method of dealing with the problem entirely out of consideration. The State has a responsibility which does not obtain elsewhere. At this moment the process of destruction of the woodlands which is going on, and which has been described in Part I. and II., is due to the legislation of the State, and, as we have already pointed out, this grievous waste of the woods, with its menace to industries depending on them, must continue unless the effects of this legislation are checked by further State action. But in the past it may be broadly stated that the excessive reduction of the woodland area of this country is due either to what the State has done or to what it has neglected to do. Leaving aside the cutting of forests in certain districts for political purposes which had "reasons of State" to explain it, the conditions under which great grants of land were made after the various confiscations requiring their use for the public benefit, were never enforced in this respect. These lands, including the crown lands from which the Quit and Crown Rents that are now administered by the Commissioners of Woods and Forests have been drawn, contained vast areas of forests which are described in the grant deeds as the King's Woods. No precaution was taken by the State to save these in any way. Throughout the 17th and 18th centuries the grantees were allowed to do with timber as they pleased, and what they pleased was in the main to realise with reckless extravagance, with the result that the greater part of the country for which at least shelter might have been preserved, is in its present bare and wind-swept condition. Had provident and intelligent government action been applied to the subject in Ireland, undoubtedly the forest area and the general agricultural wealth of the country would be in a far better position than they now are. It is, moreover, an important factor in the case that the proceeds of the Quit and Crown Rents, which are entirely derivable from these lands and which have yielded a return of upwards of £60,000 a year, have never, since the union of the Irish and the British exchequers, been directly spent in Ireland or applied to Irish purposes, but have been, with the general crown revenues, invested in Great Britain, sometimes even in promoting forestry.* There is finally the fact that the State, in abolishing the landlord through the Purchase Acts, is bound to provide and has not yet provided a machinery to discharge his functions in respect of several matters, including woods, which cannot be left to individual tenant purchasers, and in which the general community, as well as the tenant purchasers, has now a specific interest. Having regard to what is at present occurring in the country, we cannot hesitate to say that, not only does the responsibility lie on the State for taking action, but that if action be not taken at once it will mean a gross neglect comparable with the improvidence of the past and far less excusable.

Appendix 2-6.

A Central Forestry Section.

*The Department
of Agriculture at
present endowed
with necessary
powers. Funds
alone needed.*

56. A Forestry Authority already exists in Ireland in the Department of Agriculture and Technical Instruction, which is endowed with powers, under the Agriculture and Technical Instruction (Ireland) Act, 1899 (62 & 63 Vic., c. 50), for aiding, improving and developing forestry, and which is entitled to apply to that purpose funds administered with the concurrence of the Agricultural Board. Moreover, under section 4 of the Land Purchase Act, as we have already seen,† the Department can be regarded as trustee for the acquisition for

* Four sums, amounting to a total of £77,601 (including £15,636 invested in Bank of Ireland Stock), are the only exception to this rule. (Appendix 2.)

† Page 5.

forestry purposes of lands coming under the operation of this Act. The Department has already taken some important steps in the exercise of its function as Forestry Authority. These include the establishment of the Avondale Forestry Station, and the commencement of a system of forestry education, as well as other measures which are alluded to in Part I., and are mentioned in Appendix 1. It is stopped, however, from a more extended exercise of its function in this respect by lack of funds, and only by lack of funds. Although the Agricultural Board may consent to the application of some of the Endowment Fund, which they administer, to the purposes of forestry, and have done so already, that fund is inadequate for the primary purposes for which it was intended, and it would be impossible for the Board to embark on the promotion of a comprehensive scheme of afforestation unless a special fund were made available for this object.

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57. The situation therefore is, that legislation will not be required for the establishment of a Forestry Authority, this being now in existence, and that funds only are needed to enable this authority to begin forthwith the work which we contemplate. We, accordingly, recommend that, in order to carry out a national scheme of afforestation, the Forestry Section of the Department of Agriculture be strengthened and developed, and special funds provided for the work this Section is to do. These funds should be administered under the control of the Agricultural Board. The Section ought to be specially assisted by an Advisory Committee on Forestry, on the lines of the Advisory Committees on Live Stock Improvement and other matters which have proved in actual experience to be of such great value to the Department in connection with their schemes. This Advisory Committee should be composed of persons having special knowledge of woodlands and of the timber industry, and representatives of County Councils, and its duty should be to advise the Forestry Section with particular reference to the preparation of its schemes and generally on all matters appertaining to its work. The representatives of the County Councils on this Committee might be chosen by the Provincial Committees of the Council of Agriculture.

*Provision of funds
and development
of Forestry Section
of Department
recommended.*

58. It should be the duty of this Forestry Section, on behalf of the Department :—

*Functions of the
Forestry Section.*

(1) To acquire, under the Land Purchase Acts or otherwise, areas of land suitable for plantation, and existing woods which either come under the operation of these Acts, or which their owners were willing to dispose of, and which it might consider worthy of preservation or development.

(2) To plant and manage directly such of these lands and woods as might best be managed directly by the Central Authority.

(3) To be prepared to act as agent and manager in Ireland for the Commissioners of Woods and Forests as regards any lands which might be acquired by them in Ireland for forestry purposes with the proceeds of the Irish Quit and Crown Rents.

(4) To arrange for the vesting in County Councils of such woods and lands as might best be managed by local authorities on schemes settled and carried out under the advice and supervision of the Central Authority.

(5) To arrange and administer a scheme of facilities for encouraging private owners, whether large proprietors or tenant purchasers, to develop and extend plantations on their lands.

(6) To facilitate and promote industries having special connection with the woodlands under its care; to take measures for the proper exploitation of the output of these forests and of the lands connected therewith; to facilitate the better organisation of the Irish timber industry; and to act as an intelligence bureau for that industry, and for all the interests that relate to forestry in Ireland.

(7) To take charge of the system of technical instruction applied to forestry.

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AFFORESTATION.

(8) Generally to bring within a comprehensive system of administration, including all the above elements, and others which it may be found necessary to include from time to time, a national scheme of afforestation for Ireland; and to administer that scheme.

*Staff of Forestry
Section.*

59. The Forestry Section would have a staff of experts in forest management and trained woodmen for planting and managing the new lands and existing woods directly worked by the Section, and for furnishing supervision and expert advice to County Councils and private owners for the management of woodlands under their care.

*Subjects to be
considered in con-
nection with the
Committee's
scheme.*

60. We do not propose to discuss here questions of technical and administrative detail, which will be the business of the Forestry Section. We shall confine ourselves in what follows to such general matters as it is necessary for the public of the country, the Government and the County Councils to consider with some closeness in forming a judgment upon the course of action which we advise. Those will be concerned chiefly with :—

- (1.) The *modus operandi* of the Forestry Authority in the acquisition and disposal of lands and woods for the purpose of the national scheme.
- (2.) The mode in which the County Councils may co-operate in the scheme and be facilitated by the Forestry Authority.
- (3.) The mode in which private owners may co-operate and be facilitated.

Acquisition of Land by Forestry Authority.

*Extension of
powers and provi-
sion of funds.*

Brown, 2412-27,
2458.

61. The Forestry Authority should be placed in a position to acquire on its own behalf, or in order to re-vest them in County Councils, or on behalf of the Commissioners of Woods and Forests with their concurrence, all woods and lands which it deemed desirable to acquire for the purposes of afforestation. To do this, save in so far as the transactions in connection with the Commissioners of Woods and Forests were concerned, would need the provision of a special Forestry Fund or Vote. It may also ultimately need legislation to extend and better define the powers of the Department of Agriculture and the County Councils under the Agriculture and Technical Instruction Act, and under the trustee section of the Land Act of 1903; but having regard to the transactions that have actually taken place with the use of these powers, it would seem that, if funds be made available, a great deal may be done under the law as it now stands. It is competent for the Department of Agriculture and for County Councils to acquire and manage lands and woods for forestry purposes, and, where the transaction is under the Purchase Act, to assume, as trustees within the meaning of the Act, the position of tenant purchasers. This arrangement would have the advantage for these bodies that they would be able to pay for the land and woods by purchase instalments on Land Act (1903) terms, instead of having to provide a capital sum. We must assume that as the Purchase Acts proceed with their work, a greater proportion of the land and woods of the country which it would be right for the Forestry Authority and the County Councils to acquire, will come under the operation of these Acts and can be purchased in this way. But there will be a large share of such lands and woods which must be bought directly from their owners. Of the land examined for the Committee in the surveys referred to above, over 20,000 acres, which are suitable for the purpose and immediately available, are of this description. So are the woods outside demesnes which the landlords are now, for lack of other means of disposing of them, selling to timber merchants, and which the Estates Commissioners tell us in their memorandum they have no power to deal with in any way. The Forestry Authority should be enabled to acquire these, as well as the woods and lands suitable for forestry coming into the hands of the Estates Commissioners and the Congested Districts Board. One of the first things it should be possible for the Forestry Authority to do is, to acquire

Appendix 15.

Appendix 8.

owners desiring to sell their woods that the State is open to consider offers on terms no worse than they can get from a timber merchant.

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Grazing Rights.

62. The existence of tenants' or tenant purchasers' grazing rights over some of the lands which it may be desirable to acquire is one of the points of difficulty that has to be considered in these transactions. Over a very large area of the mountain and waste land no such rights now exist. The lands above alluded to which have been practically offered to the Committee, are mostly free from incumbrance of the kind. But undoubtedly a great proportion of the sort of land which is most suitable for the purposes of an afforestation scheme will have this feature attached to it. The grazing of such land will be worth very little; indeed, much of it intrinsically worth nothing and not utilised; but, such as it is, it will have to be dealt with in the purchase. All the experienced witnesses we examined on this point were of opinion that the holders of such rights would be quite ready to part with them on reasonable terms; and that when they understood that it was not intended to acquire from them any of the lower mountain grazing which might be of real value for their stock, and that planting operations in their district might be a means of employment for their labour, they would welcome and gladly facilitate a forestry scheme in every way. The witnesses believed that clear explanation on these points and tactful negotiation would suffice to remove all such difficulties in most instances without any call for compulsion. But most of the witnesses expressed the further opinion that cases would be likely to arise in which it would be well for the Forestry Authority to be armed with compulsory powers for buying out such rights. One or two men, acting from no reasonable motive, would be able to block a whole scheme, which all the rest of the tenants might be willing and anxious to facilitate. This sort of thing has, in effect, happened to the Kildare County Council, whose scheme, in co-operation with the Department of Agriculture, for the acquisition for forestry purposes of King's Bog Common, has been brought to a deadlock by such means. It is not right that the interests of the country or of a particular district, and the efforts of the State to promote them, when the State, the local authorities, and the majority of the owners of the rights concerned concur in the desire to do so, should be thus obstructed. But it is believed that if the Forestry Authority were furnished with compulsory powers for this purpose, the mere existence of these powers in the "background" would suffice to do away with most of this class of opposition, and that it would be in a very rare instance indeed that the need would arise for their actual exercise. It is felt, moreover, that they could be accompanied by precautions which would free them from all reasonable objections on any ground. First, compulsion should be applied only in the way which now obtains under the Purchase Acts in the case of a minority of tenants opposing the purchase of an estate: it would be applicable only where there was at least a majority of three-fourths of the holders of grazing rights on a given estate willing to sell them. Second, these compulsory powers should only be exercised by the Central Authority. The above describes the views laid before the Committee by witnesses who gave evidence on this point and views expressed at the conference of Chairmen and Vice-Chairmen of County Councils; and we have only to add that they quite accord with the opinion which, from our own experience and knowledge of the country, we have formed on this subject ourselves.

Compulsory powers for purchase of grazing rights.

Fecton, 360-8;
Nisbet, 2810-11;
Pigot, 820-3;
Dobbs, 1407-21,
1627-31; Scott-
Kerr, 1655-84;
Galvin, 981;
Mitchell, 1324-7;
Brown, 2450;
Delap, 3708;
MacAskey, 5431.

Doran, 2163-5.

Brown, 2428-34,
2488-92.

Forbes, 368-9;
Dobbs, 1606-9;
Brown, 2450;
Delap, 3786-7.

Pigot, 820, 829-
31; Brown 2497.

Dobbs, 1627-31,
1635-8.

Appendix 67.

*Management of
lands acquired
under scheme.*

63. Of the woods and lands so acquired the Central Authority would first take into its own hands the management of all the larger areas; and next, would arrange for the management of areas of, say, under 100 acres by the County Councils, on schemes approved by the Central Authority and worked under its supervision and advice.

The chief part of the scheme directly undertaken by the Forestry Section would be the creation of the State forest area of 200,000 to 300,000 acres

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on the larger blocks of mountain land. This work would be done by its own staff, local and central, and financed from its funds in accordance with whatever plan for supplying these funds may be adopted. Financial and other particulars of this part of the scheme are given in Estimates I (a) and I (b) in Part IX. of this Report.

THE CO-OPERATION OF COUNTY COUNCILS.

*Suitability of
County Councils to
manage the smaller
woods.*

Appendix 45 (5).

Forbes, 114 (p. 8),
207-24; Galvin,
534; Dobbs,
1561-3; Mont-
eagle, 2322,
2329-31; Brown,
2635-6; Villiers
Stuart, 3446;
Henry, 4021;
Munro-Ferguson,
4239, 4245, 4307.

64. The County Councils, it seems to us, are now singularly well situated, if given the facilities which we shall describe, for dealing with the problem of the smaller woods; and for dealing, moreover, with an analogous problem, to which we have already made allusion, which also affects that of the woods, namely the category of rights, duties, and interests which either belong to the tenants in common on a purchased estate, or, having hitherto devolved upon the landlord, have as yet no effective individual or constituted body provided to represent them. The Irish County Councils, as has been pointed out, are not such compact bodies as the "communes" and "corporations" of continental countries, nor have they the long experience in the ownership and management of corporate property, whether in woods or land. But they are the natural substitute in our system for these bodies; and it is evident that a function is opening for them in a similar direction.† With the change from landlordism to peasant ownership they must come in for the discharge of many of the duties on behalf of the community which fall to the State or local bodies in other peasant proprietary countries. They have proved their readiness and their aptitude for work of this nature under the Agriculture and Technical Instruction Act. The complex and often very technical schemes administered by them under the supervision of the Department of Agriculture for improving the methods of the agricultural industry in its various branches, stock-breeding, dairying, poultry-keeping, &c. and so forth, and for advancing the education of the farming class, constitute an important collateral element in the security of the State for its investment under the Land Purchase Acts, and they derive an additional value from the fact that they are locally administered and assisted from the local rates. In carrying out these schemes the local authorities have developed a skill which will serve them in other directions; and they have added to their county staffs officials who can be of use in some parts of the new work. The smaller county woods now passing from the landlords, rights of way leading from these woods to county roads, drainage passing through these woods and affecting holdings on purchased properties, estate roads passing through these woods or through tenant-purchasers' holdings, embankments hitherto maintained by the landlord that may affect these woods and may also affect purchased holdings, rivers and streams which may get silted up and blocked by fallen trees, or other obstructions, to the detriment of the woods and perhaps also of purchased holdings,—all these, and several other matters with which it is not our province expressly to deal, but which have an influence upon our problem, and which we cannot keep out of our minds when making our recommendations, are in our judgment proper subjects for action by the County Councils. The security of the State will be impaired if these matters—which being everybody's business are nobody's business—are left in their present indeterminate condition, and if no precautions are taken against misuse in other ways of land which for the next seventy years at least must be regarded as in effect the property of the State, and in buying which for the special benefit of a single class, the money and the general interests of

† The Corporations of Liverpool, Manchester, Leeds, and Birmingham, as well as Edinburgh, through their municipal waterworks committees, are planting a considerable extent of woods in the suburban areas of their water works. The best known of these areas belong to the Liverpool Corporation, by whom 1,200 acres have been collected for planting at Yrwyry, in N. Wales, and 1,245 acres at Rivington, in Lancashire. Of these, by the end of 1906, 206 acres were planted at Rivington and 426 acres at Yrwyry. Manchester has also 644 acres of planted land at Turfmoor, in Cumberland, and it is proposed to plant about double as much waste land, bringing up the area to 2,000 acres. The Engineer of the Liverpool Waterworks, in the Report of the Conference on Afforestation on the 25th June, 1907, page 28, gives a very favorable estimate of the financial results of these plantations.

all the classes of the community are engaged. These matters, in our opinion, are bound to be neglected if steps are not taken for systematically utilising the County Councils in connection with them.

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Facilities for County Councils.

65. The facilities which should be provided for the County Councils in respect of their forestry work are these. They should be placed by the Central Authority in the position of tenant purchasers under the Purchase Acts, the State advancing purchase money in respect of such woods or lands as it was decided they should acquire. When it was necessary to incur any capital expense on planting or otherwise, the Central Authority or the Board of Works would make them an advance for the purpose, which would be repayable on a system of payments graduated on the principle of making the instalments larger, as returns from the woods became available. The produce from the woods should become the property of the County Council from the first. It would probably be found that in many instances there is enough mature standing timber in these woods to admit of thinnings at once, the sale of which would furnish the County Council with a sum that would go far to meet the expense of replanting and other operations. The County Councils should, furthermore, be assisted by the Central Authority with expert advice and supervision. This is indispensable, and is, indeed, in our judgment the most important aid of all.

*Transfer of woods
from Central
Authority to
County Councils.*

Pigot, 832, 835-41.
Brown, 2533-5.

Central Supervision.

66. The first condition of successful forestry, that which differentiates it from forestry conducted mainly for sport or amenity, is the application of expert skill; and forestry is a crop for which a rotation of fifty to eighty years must be planned and made sure of. Even if our County Councils had the experience in forest management of their continental analogues and the prevalent atmosphere of traditional knowledge to support them, the expert aid and supervision of a Central Authority would still, as it is in these continental countries, be necessary for their operations. It is most important to realise this fact. In the most highly developed forestry systems of the continent, and in the most democratic countries, and even in the case of local authorities of almost national standing, like the cantonal governments of Switzerland, it has been found necessary to subject the management of all woods owned by any public body to the control and supervision of a Central Authority. We regard it, therefore, as essential that the administration of woods by County Councils in Ireland should be provided with this aid and safeguard. The precedent for this feature of central advice and superintendence and local management exists with us already in the county schemes of agriculture and technical instruction; and the principle has actually been applied to a forestry scheme in one county.

*Relations between
County Councils
and Central
Authority.*

Appendix 45 (5).

(Kildare) Brown
2475-81.

To secure this end, the acquisition of lands and woods for forestry purposes by the County Councils should only be undertaken with the sanction of the Central Authority, and in pursuance of a county forestry scheme approved by it. Indeed, the best plan will be for the Central Authority to acquire these woods and lands in the first instance, and then devolve them upon the County Councils on a settled scheme of management according as such schemes are worked out and approved. This would probably be the only practicable, as it is certainly the most desirable plan, in the circumstances. All the County Councils will not be ready for this work at the same time; nor, if they were, could the Central Authority be ready simultaneously to approve of a number of schemes, each one of which will have to be considered in detail with the greatest care on its own merits, both as regards its financial and administrative provisions. The land and woods can probably be acquired in the promptest and safest way by the Central Authority in connection with their general scheme for acquiring the larger areas, and held by them pending the settlement of schemes for re-vesting in the respective local authorities. In Kildare the Department of Agriculture and the County Council have been carrying out a useful experiment in this branch of administration, and the experience gained there points to these conclusions.

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A NATIONAL
SCHEME OF
AFFORESTATION.*Methods of
managing County
Councils' woods.*(1) *Direct labour.*Dobbs, 1556.
Brown, 2538.
Appendix 47.

Appendix 70.

67. We agree with the opinion expressed by some witnesses, and at the conference of Chairmen and Vice-Chairmen of County Councils, that the county surveyor and his staff could be utilised with great advantage in connection with these schemes. These officials are always moving about the county, and their business is concerned with its area in various aspects, of which they keep record in their maps and documents. It would be natural for them, in their inspections and arrangements for the repair and maintenance of roads and county works, to include the county woods under their ken. Indeed, where a system of direct labour on roads is in being, as it is now in some counties—and it seems probable that the system will be extended—the County Councils seem to have at their hand a machinery which places them at a remarkable advantage in dealing with local woods and forest land. This system gives the county a trained and disciplined labour staff, working under experienced gangers, and grouped in sections covering the whole area of the county. These men are permanently employed by the county, and are paid a fixed rate of wages.* It would seem to us that any fencing, draining, improving, or other work needing to be done on the county forest lands could be included in the duties of this staff, and that thus the County Councils could undertake the maintenance of such lands at the minimum of cost and with the maximum of efficiency. No private owner would be so well situated in this respect. Of course, such work would be in pursuance of the settled county scheme of forestry, and would be under the inspection of the Central Authority, and it would be undertaken from time to time on the advice of a forester provided for one or more counties by the Central Forestry Authority, or of some similar officer otherwise provided. This officer, while working in a county, might be attached for the time being to the staff of the county surveyor, to whom he would submit requisitions for such labour and materials as might be needed. The finance committee of the County Council, who deal fortnightly with the pay-sheets for the direct labour staff, would have the system under their constant supervision without extra trouble or complication. We believe it would be practicable, moreover, for the district gangers to report weekly to the county surveyor as to the smaller woods in their district, and thus provide a check upon trespass and larceny of growing timber. For the larger woods the County Council should have power to build cottages as residences for caretakers. This would require legislation as, strangely enough, the County Council has no cottage-building powers now.

(2) *Contract
labour.*

In counties which have not and may not adopt any direct labour scheme as regards roads, the work might be arranged for by contract, subject to the control of a county forestry officer, who might or might not be attached to the staff of the county surveyor.

*Advisory
Committee.*

68. The forestry scheme does not seem to us to be one which the County Council could devolve upon a committee in quite the same way as it devolves the county schemes of agriculture and technical instruction, but it would be well that the Council should have a small advisory committee specially to assist it in the management of the scheme, and this committee might be a sub-committee of the County Committee of Agriculture, and at any rate it would obtain very important help from the County Committee, especially in connection with the encouragement of tree-planting by the smaller holders. The present county horticultural schemes, under which trees are distributed at cost price, and which include the advice of an expert instructor, are probably the best form in which this class of encouragement could be provided.

*Attentive
proposal.*

69. In giving the above outline of some of the methods by which a County Council might administer a scheme of afforestation we do so suggestively and not as a positive recommendation. The subject is one to be carefully considered by the County Councils themselves and by the Forestry Section.

* See Memorandum in Appendix 70 on five years' experience of a direct labour scheme.

But the work proposed being wholly new, and calling for transactions of much complexity, involving, moreover, a new class of functions for public bodies, local and central, we have thought it useful to put forward something concrete in the way of suggestion and illustration.*

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Willingness of County Councils to undertake these functions.

70. The question of the willingness of the County Councils to undertake such functions as we have indicated in regard to forestry development is of course a vital consideration. Happily we think any doubts on this point may be regarded as disposed of. With a view to ascertaining the feeling of these bodies on the subject the Committee invited a conference of Chairmen and Vice-Chairmen of County Councils which took place in Dublin on 2nd January. A summary of the proceedings of this conference will be found in Appendix 67. After a full discussion the conference unanimously adopted the following resolution, and the Chairmen and Vice-Chairmen arranged to bring it up for consideration at meetings of their respective Councils as soon as practicable:—

*Conference of
Chairmen and
Vice-Chairmen of
County Councils.*

Appendices 66-69.

* That the County Councils are the proper authorities to be entrusted with the management of the smaller local woods within their counties, which are passing from the hands of private owners, and that in our opinion the County Council, being given the requisite facilities in respect of loans under the Land Acts for the acquisition of land, &c., and in respect of expert advice and supervision from a central authority, should be prepared to undertake the custody of such woods, and to work them for the benefit of the county.*

In accordance with the arrangement come to the subject has since been discussed by twenty-nine County Councils, some holding special meetings for the purpose; and twenty-five of them have adopted the above resolution or passed resolutions of their own in favour of the principle involved. This seems to us a sufficient demonstration of the attitude of the County Councils to this subject. We may add that it is indirectly a valuable indication of the spirit which can be awakened on the subject throughout the rural districts of the country, and which can be relied on as a corrective of many of the tendencies now in operation, and a support for any forward move in forestry development.

FOREST EXTENSION, PARTLY BY PUBLIC AUTHORITIES AND PARTLY BY PRIVATE OWNERS.

71. What proportion of the 306,000 acres of existing woodlands will pass from their present owners to the State and the County Councils, it is impossible now to determine. That a certain proportion of them will so pass is inevitable. The extent of one class of these woods that must change hands can almost be fixed, that is, the smaller woods outside demesnes. There are probably 50,000 acres of woods outside demesnes which are too small to be undertaken directly by the State. These, with the exception of such clumps and belts as would be left in the tenant purchasers' holdings, and of such woods as are not too remote from the demesne for the landlord to retain them, will probably go to the County Councils. Some of the larger woods on demesnes have already come into the hands of the Estates Commissioners and the Congested Districts Board under the Act of 1903, and some of these have already been acquired from the former authority by the Department of Agriculture. No doubt under a national afforestation scheme many more of such demesne woods would be similarly acquired by the State, and it is probable that the Forestry Authority would think it right to acquire other woods of the same kind directly from their owners. Thus, the 306,000 acres of existing woods must be regarded as an area part of which would come into the possession of the State and the County Councils, and part of which would remain in the possession of the present owners. But whether it be dealt with by the public authorities or by private owners, it must be considered, as regards its management and its extension, in a category apart. Our national scheme of 1,000,000 acres contemplates the addition of a new forest area of 700,000 acres.

*Ownership of
woodlands under
the scheme.*

* For financial illustration for Co. Councils see Estimate II. in Part IX.

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Of this amount 200,000 to 300,000 acres would be State forests directly created on the larger tracts of mountain land by the Forestry Authority. The remaining 500,000 acres must come mainly in the form of extensions of the existing woodlands upon the holdings of tenant purchasers which are larger than 100 acres, upon demesnes, upon inferior pasture or mountain land in the hands of larger proprietors, and upon lands in connection with woods acquired by the County Councils and the Central Authority.

*Ownership of
woodlands in
various European
countries.*

Private Owners and Forestry.

72. Although, as we have pointed out, a considerable proportion of the existing woods must pass from their present proprietors, the probability is that the greater portion will remain in their hands. For this, and for other reasons, it will be best to consider this branch of the subject as if it related principally to the part which might be taken in a national scheme by the private owners. In every country where attention is paid to State forestry, the work of the State is invariably accompanied by the development of private enterprise in forestry operations, and private enterprise is in various ways encouraged and facilitated by the State. As a matter of fact, the proportion of forests in the hands of private landowners greatly exceeds in most countries the proportion in the hands of the State; and it seems highly probable, having regard to the effects of land legislation in this country, that whatever we may do with our national forestry scheme, the proportion of the woodlands remaining with private owners in Ireland in comparison with that in the hands of the State and of the local authorities will be smaller than it is in most other countries. The following figures* indicate the part played respectively by the State, local administrative bodies and private landowners in building up and maintaining the necessary extent of forest in the principal Continental countries.—

	Crown and State.	Communal and Proprietary Bodies.	Private Owners.
	Acres.	Acres.	Acres.
German Empire, ...	11,407,773	5,163,350	17,875,880
Prussia, ...	7,134,212	3,121,220	12,039,000
Bavaria, ...	2,516,353	933,809	3,546,000
Saxony, ...	443,147	78,430	447,578
Austria, ...	2,638,810	3,883,940	18,128,200
Switzerland, ...	84,720	1,419,060	614,220
Hungary, ...	3,561,000	11,140,000	7,575,000
France, ...	2,444,640	4,911,000	14,967,240
Italy, ...	405,000	4,349,000	5,359,000
Russia, ...	309,600,000	51,600,000	134,800,000
Sweden, ...	9,400,000	—	38,400,000
Norway, ...	3,040,000	510,000	14,450,000
Belgium, ...	63,000	441,000	736,000
Denmark, ...	163,680	—	518,320

The following shows the above table expressed in percentages :

German Empire, ...	53	15	32
Prussia, ...	52	14	34
Bavaria, ...	54	14	32
Saxony, ...	45	9	46
Austria, ...	11	14	75
Switzerland, ...	4	27	29
Hungary, ...	16	50	34
France, ...	11	28	61
Italy, ...	4	48	48
Russia, ...	60	10	30
Sweden, ...	20	—	80
Norway, ...	12	8	80
Belgium, ...	5	35	60
Denmark, ...	21	—	76

* Furnished by the Statistics and Intelligence Branch of the Department of Agriculture.

Two striking features appear in the above list. One is the fact just alluded to: the high percentage of private woods in all countries; the other is the high percentage of forest owned by the State or public bodies in countries like Denmark, Prussia, Bavaria, Saxony, where, by great measures of State purchase, the land has been transferred to peasant owners. The case of Denmark is of particular interest, since it is a country mostly of small owners, and one whose conditions resemble those of Ireland most nearly. These two facts are worthy of special note in considering Irish forestry. The first proves that private forestry must always be developed in some form or other if an adequate area of woodland is to be secured. The second points to the fact that in a country of peasant proprietors the State requires to take a more prominent part in forest development than in one composed principally of large estates.

73. One of the reasons why a high, if not preponderating, percentage of private woods may also be looked for in Ireland is the fact that the private owner here as elsewhere is able to work on small areas, and is thus in a position to utilise a large extent of land which, on economic grounds, could not be acquired and worked by the State. He has the land in his possession as it is; and it is a question with him, if he have capital enough, or if he receive adequate facilities from the State, how best to make use of the property on his hands for the different objects he has in view in enjoying it. He considers the revenue it may bring; but he considers also shelter, ornament, cover for game, and the supply of timber for fencing, repairs to out-buildings, farm implements, and other domestic purposes of his own, and he feels, besides, the desirability of meeting a local demand for timber for these purposes amongst his neighbours. It thus becomes worth his while, if he is in a position to do so, to plant on any suitable land, whether on odds and ends of patches or on small or large blocks upon his property. In the same way the farmer as well as the large proprietor, if he get the requisite facilities, will plant on suitable spots on his holding. By this means the quantity of planting that may be done in a country by private owners, however small it sometimes may be in individual cases, amounts in the aggregate to very considerable figures. This has hitherto been the common experience, and in Great Britain, of course, the fact is that, with the exception of the small area of crown forests, practically all the planting has been done in this manner.

*High proportion
of woodlands
in hands of
private owners.*

Encouragements for Private Owners.

74. As things now are, it would be vain to count on any large extension of woodland on private holdings in Ireland, and it is obvious that a great change in administrative action, and probably also in the law, including positive encouragement and facilities, would be necessary to bring it about. As we have seen in Part I., the prevailing spirit of land transfer operations at present is—no doubt unavoidably, having regard to the conditions—hostile to trees. The landlord and the Land Commission find them an obstacle to sale, and there is a sort of premium on their removal. The tenant purchaser seeing in this way so little value being set upon them, can hardly be blamed if he too shares the tendency to cut down and realise upon any timber that falls into his hands. The landlord, moreover, is affected in this matter by a certain feeling of insecurity in regard to the land which he may desire to hold in his own hands, whether it be a demesne or a mountain tract. He cannot feel confident in undertaking planting operations until the progress of the Purchase Acts makes it fairly clear that such land will not be required of him for the creation of new agricultural holdings. These are influences against planting on private holdings which need to be removed, and which we believe a definite administrative policy for the promotion of forestry will suffice to remove. That policy should then include certain encouragements to planting by the private owner, which we will now consider.

*Existing influence
against planting
by private owners.*

*Villiers Stuart,
3410-3.*

Schemes for the smaller occupiers.

75. The case of the smaller holder, the man who would plant from a few roods up to three or four acres, would, we are inclined to think, best be met

*Extension of
agricultural
scheme of
Department of
Agriculture.*

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Appendix I.

Appendix 1 (9).

Doran, 2121-5.

Appendix 2 (7).

Appendix 11

44 & 45 Vic., c.
42. 1881.
46 & 47 Vic., c.
43.

Stevenson, 1066.

by an extension of the system now in vogue under the Agricultural Department's horticultural schemes in the counties, by which trees are supplied to such holders at reduced prices, together with direct advice and assistance in planting. The necessity would hardly arise in this case for putting the occupier under the obligation of a loan. One of the points taken into account at present under the county agricultural schemes for the best kept cottages and small farms, is the judicious planting of shelter belts, for which such facilities as these are given. The chief advantage here is the expert advice and supervision of the county horticultural instructors. The Congested Districts Board have been distributing trees to small holders in a similar way. But, as Mr. Doran, the Chief Land Inspector of the Board, pointed out in his evidence, this work suffered until within the past three years the proper supervision of the planting was provided by the Department's county instructor in horticulture being made available for the purpose. Another important factor in this system is that precautions against the introduction of diseased or otherwise unsuitable trees are taken by insistence on a guarantee from the nurseryman, and by inspection of the trees by the Department's expert. The number of trees and shrubs planted under the Department's schemes up to the present has been 781,778, of which over 504,000 were forest trees and shrubs, the remainder being fruit trees. Over 200,000 forest trees in addition were distributed by the Congested Districts Board. An extension of this system would appear to us to be a natural and an easy thing to promote. A system of loans through the Board of Works for planting purposes has been available for occupiers of this class under the Land Law (Ireland) Act (1881), as amended by the Tramways and Public Companies Act (1883). But the fact that in the twenty-four years during which this provision has been in operation only six loans for the exclusive purpose of planting have been granted, involving a total sum of £805, seems to indicate the unsuitability of the system for such occupiers, and to confirm the view that the system of the county schemes is the best in this case.

Scheme for the larger holders.

*Recommendations
as to Board of
Works' Loans.*

29 & 30 Vic. ch.
40.
7 Edw. VII., ch.
36.

Appendix 13.

Stevenson, 1644.

76. For the farmer holding 200 acres and upwards and the larger landed proprietor, the inducement must be of a nature that would relieve him to some extent from the immediate lock-up of capital incurred in planting operations and at the same time, provide a guarantee that the outlay would prove, so far as the holding is concerned, a sound investment. Easy loans, with deferred interest, absolute security of tenure in respect of the lands coming under the scheme, and free advice in all branches of forestry, are the chief means which seem to us best calculated to meet this case. The present Board of Works loans which are available for owners of this type are made under the Landed Property Improvement Act of 1866, and the Public Works Loans Act of 1907, the latter of which was passed on the initiative of the Commissioners of Works in order to remove the limitation restricting these loans to planting for shelter only. Since 1866 a sum of £33,600 has been advanced for this purpose. The loan must not be less than £100 and it must not be more than seven times the annual Poor Law Valuation of the property made liable for the payment. In the case of tenant purchasers the loans do not exceed five times the annual value of the holding. Repayment extends over thirty-five years at a rate of 5 per cent. per annum, including interest at £3 10s. 0d. per cent., and is secured by a charging order on the fee-simple of the land. Landowners, with the sanction of the Board of Works, may also borrow for planting purposes from outside bodies under the Settled Lands Act, 1882. We are of opinion that this system for encouraging tree planting by private owners is inadequate, for two main reasons. The chief difficulty of the landowner is that of procuring competent expert advice for the planting and carrying out of his forestry scheme; and expert management is the chief essential for success in forestry. No provision is made in the system of loans for making such advice available or securing that it will continue in effective operation during the period of the loan. The next chief difficulty of the owner is that during the early years of a planting scheme he gets no return from his outlay, the real benefit of which is to be reaped by succeeding generations, and to be shared by the community at

45 & 46 Vic., ch.
38.

Stevenson, 1115-
6.

large as well as by his heirs. The present system of loans takes no cognisance of this fact. The weight of the repayment instalment is equally great from the first, and more than three-fourths of the loan have to be repaid before any returns from the scheme become available. If the provision of an adequate timber supply is to be regarded as an object of great national importance, and if the co-operation of private owners in the scheme be necessary, this system of encouragement should take a different form. The burden should be taken off the earlier years and placed upon the years when revenue began to be earned. We would apply the same principle here as we recommend in the case of County Councils needing advances for capital expenditure. In our opinion the importance of this matter is so great that we would defer the repayment of instalments of principal, charging only interest for, say, the first twenty-five years, and from the twenty-fifth year begin a scale of repayment, extending the loan over a period in all of, say, fifty years, the loan to be secured as at present. We would, further, have the owner provided with expert advice practically free, charging him only the travelling expenses of the forestry expert from a given centre. Expert management should be regarded as a cardinal feature of the system. We would make the issue of the loan absolutely conditional upon its being applied to a scheme approved by the Forestry Authority, and upon the plantation being subject to the periodical supervision of the Forestry Authority's experts. We also think it important that the Forestry Authority should have power, by means of penalties or otherwise, to insist on damage through culpable neglect being made good by the responsible occupier, so that plantations created by State loans might be forthwith restocked at his expense. Facilities given under this scheme would be liable at any moment to be withdrawn on any of the conditions of management settled in the scheme being violated.

Mr. Munro-Ferguson, in his evidence, expressed a very positive opinion against a system of loans to private owners, and we have given to his objections the weight which the opinions of such an authority deserve. But we are bound to say that, in our judgment, Mr. Munro-Ferguson takes too cautious a view of this matter, and that, perhaps, through not having the circumstances of this country chiefly in mind—especially two circumstances: experience regarding the repayment of loans in connection with land, and the development during the last eight years of systems of agricultural improvement under expert advice—he exaggerates some of the difficulties. In the system we contemplate—in which administration for forestry development would go hand-in-hand with administration for land improvement in various ways, and in which skilled foresters acting under a Central Department and County Councils would be constantly at work and available, and in which, moreover, the landowners concerned would either have sold their tenanted lands and be concentrated on the more compact work of developing the land in their own hands, or else would be large farmers—the facilities for securing continuous effective inspection and management of planting schemes on which State money was advanced would be much greater than he anticipates. We think, moreover, that since hitherto the element of expert advice and fully-planned forestry schemes founded on economic principles has been almost totally absent, the provision of these matters will give a new element of security to the tree-planting loans. It is our opinion, therefore, that these loans should be amended in these respects.

Co-ordination for Land Improvement Loans.

77. We would add that it seems to us the time has come when the whole system of land improvement loans for other subjects besides tree planting should be put on a new basis and adjusted to the circumstances created by the Land Purchase Acts, and by the schemes of agricultural improvement now being carried out in every county under the Agriculture and Technical Instruction Act. It should be possible also, as is now the case in a certain class of loans to occupiers, for tree-planting loans to be included with loans for general improvement, such as drainage, affecting other parts of the holding. By this means the area of security would be widened; and if the improvement loans are also only made in accordance with expert advice, the security of the State would receive a further strengthening.

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A NATIONAL
SCHEME OF
AFFORESTATION.

Slevenson, 1118,
1143-50.

Munro-Ferguson,
4242-53, 4311-9,
4321-2.

*Adjustment of
conditions to
circumstances
created by Land
Purchase Acts.*

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Attitude of land-owners and tenant-purchasers towards forestry.
Pigot, 844-69;
Villiers-Stuart, 3473.
Pitt-Rivers, 4359.

Appendix 21.

Appendix 20,
pages 288, 289,
291.

Forbes, 70, 847-59;
Pigot, 853-4;
Galvin, 903-4;
952-3;
Doyle, 1618-21;
Doan, 2129-31.

System of bounties not seriously ended

Appendix 21.

Evans, 3031-6.

Appendix 22.

State assistance to private owners in other countries.

Appendix 23.

Schneppach,

Appendix 48.

Appendix 50.

Willingness of Owners to Co-operate.

78. Of the willingness of resident proprietors to avail themselves of these facilities, if they are provided, we feel confident. The destructive process now going on in regard to woodlands is forced upon them by necessity, and we are assured that they deeply dislike it; and that once that process is removed it will be replaced by a very different one. We feel equally confident of the feeling of the smaller holders who are becoming tenant-purchasers, of which the action of the County Councils above alluded to may be taken as an indication.* We agree with Mr. Montgomery, a member of the Committee, that where undue cutting has been done by tenant-purchasers, it is often because of the neglect of those whose advice would have had weight with them, to take the trouble to advise them. When Mr. Montgomery sold his tenanted property he issued a circular expressing the hope "that as much pride would be taken in the future by the purchasing tenants as had hitherto been taken by him in the attractive appearance which the scattered and ornamental timber gave the district in contrast to the bare and desolate appearance of many parts of the country, and that they would not unnecessarily and hastily cut down, for the sake of a few shillings, handsome trees that had taken fifty or a hundred years to grow, and which afforded shelter as well as adornment to the countryside," and he reports, more than a year-and-a-half after the land had been vested in the tenants, that he "had neither seen nor heard of any improper or uncalled for cutting of trees on the estate." Three rather striking instances, one at Forkhill, in the County Louth, and the other two on the estates of the Grocers' and Fishmongers' Companies in the County Derry, illustrative of the natural disposition of the tenants in this matter, have come to the notice of the Committee. In these places the tenants or neighbouring residents on witnessing the devastation of beautiful woods under the circumstances described in the earlier part of the Report have formed tenants' committees or otherwise combined for the purpose of acquiring the woods and re-planting them. We believe, indeed, and many witnesses have testified, that there is a love of trees amongst the people, and that so far as public opinion goes in assisting forestry development—and it is one of the most important conditions which are needed—such support will be forthcoming in Ireland for a national scheme of afforestation.

Encouragements in the Past and in Other Countries.

79. Before coming to our conclusions as to the method of aiding private owners we considered carefully the various means that have been adopted in the past. The Irish Parliament in the later 18th century, aided by and acting through the Royal Dublin Society, made a comprehensive and energetic attempt to promote forestry by means of a system of bounties and premiums on planting. The system is described in an interesting paper prepared for us by Mr. Richard Moss, Registrar of the Society. It will be seen that the bounties, while they did some good, were accompanied by many drawbacks, and that their best result was, by means of the example of those whom they encouraged to plant, the creation of public feeling in favour of planting, which indirectly promoted more extensive operations. The public feeling in favour of planting can be produced otherwise in Ireland, and we do not think such a system of bounties would be desirable. The scheme of prizes once adopted by the Royal Society of Arts has also been considered, but we do not feel inclined at this stage to recommend it.

80. We have also examined the means for encouraging private owners to plant adopted on the Continent and in the United States. These take the form, according to different circumstances, of expert advice, subsidies, loans, grants to co-operative societies of owners. The provision of expert advice, and the employment of lecturers and instructors to promote a knowledge of forestry and its advantages are strongly relied on everywhere. Among the smaller owners co-operative societies for the joint purchase of trees and plants, and the joint payment of other expenses, are found particularly helpful. Trees and plants are sometimes issued at reduced prices by the State or local authorities, as they are in Ireland under the Agricultural Department's schemes. Subsidies are chiefly given in the case of "protective" woods,† a branch of forestry which is not called for in Ireland.

* Page 33.

† See footnote on page 19.

PART VI.—ORGANISATION OF THE TIMBER INDUSTRY.

PART VI.
ORGANISATION
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*Present lack of
organization and
its result.*

LACK OF SYSTEMATIC BUSINESS MANAGEMENT—A SERIOUS DETRIMENT TO THE INDUSTRY.

81. In speaking in Part II. of the Report of the export of timber in the rough, the form in which 72 per cent of our timber output is now dealt with, we said we should refer again to this branch of the subject. The sending out of the country of so large a proportion of our timber in an absolutely raw state means that the Irish timber industry, as an industry, is not effectively organised. If it were, this traffic, which in the main is economically wasteful to an extreme degree, would be substituted by a trade in prepared timber producing returns not now available for the grower, the timber merchant and the local manufacturer, and giving large employment in Ireland. One of the facts which our evidence has most clearly brought out is this lack of business organisation in the Irish timber industry, which in its turn, is partly the effect and partly the cause of lack of technical knowledge and skill. Not only is there no systematic business management applied to the woodlands by those who own them, but amongst those who buy and saw the timber, speaking broadly, there is an absence of the most elementary features of modern commercial organisation. As one witness put it in forcible language it is "a cut-throat business." Only a small fraction of the timber sold, as we have seen, is sawn; and such as is sawn, with the exception of the proportion dealt with by certain of the more developed wood-working industries, is sawn by primitive machinery, which uses up in saw-dust an undue share of what it cuts, and it is handled commercially with apparently no reference to the requirements of systematic trade. The timber is not standardised, it is not graded, it is not prepared according to specifications for supplying quantities in bulk; when cut it is not piled in the requisite manner so as to allow it to season, but is left to lie on the ground to deteriorate and sometimes to rot; and it is often delivered in the green state. The Irish manufacturer can order from the foreign timber merchant scantlings cut to any dimensions, and can order them a long way ahead and be sure to receive what he has ordered. This is practically impossible to him in Ireland, where he has to take wagon-loads of all sorts and sizes, containing much stuff that is no use to him, on which he has to spend time as well as to pay railway rates. This is the chief reason why so large a proportion of the timber used in Ireland is imported. The Irish manufacturer with woods in his own neighbourhood, of which he is anxious to make use, often in preference gets the foreign timber, there being no means of preparing and delivering to him local timber in an economical and efficient way, whereas he can have the foreign timber delivered at his own siding prepared and seasoned exactly in the state he wants it. As one man put it, it suited him better to travel up to Dublin and buy imported timber than endure the worry and delay occasioned in buying timber locally. Even farmers who want timber sometimes find it less trouble to buy the imported timber than to go to the local wood and submit to all the difficulties of obtaining the home-grown article. These methods, besides the loss of trade and of potential industry they involve, mean a huge waste in other ways. Parts of the trees are thrown away which, in a properly organised industry, would be saved and utilised for making articles such as heads of casks, and staves for butter and bacon boxes, and so forth. An Irish manufacturer described these methods as "not saw-milling" but "a slaughter of the trees." "Certain specifications are sent, say, for 4-inch squares, and they destroy whole trees for the sake of these few squares. Dry cask-staves and heads of casks could be made from that wood. The branches, large and small, could be sawn to lengths, the thick portions cleft for fire-wood." It is in this way that most of the butter and bacon boxes and kials and fish-barrels from Norway and Sweden, which are so largely imported into Ireland, are manufactured. They are made from the short ends and other parts of trees which are cut up principally for the larger scantlings, all portions of the tree being dealt with in the one industry for which these smaller parts are an important bye-product. It is not easy to appreciate fully the improvident disorder which, in the absence of organisation, characterises the whole

Jernyns, 4716.

Perry, 672.

Jé. 727-784;
Nisbet, 2513-5.
Jones, 4735.
Perry, 658.

Isaacs, 3773-6.

Perry, 727.

Rea, 4094

Nisbet, 2511

McRae, 1203

Perry, 703

Id., 718-19.

Dean, 4453-7.

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of this industry in Ireland. As has been pointed out,* 72 per cent. of the timber felled is exported, and almost all of this is taken out of the country just as it is felled in the woods, chiefly by English and Scotch timber merchants, and shipped under conditions of transit which impair its value even in this state, to furnish either pit-props or raw-material for a higher grade of industry in Great Britain. The effects of this process upon the woods has been described in the earlier part of the Report. The same tendency towards the rudimentary stages of industry, the production of raw material and of the unfinished article, which has been so apparent in our agriculture, might be said to be evident here; but the fact is that there is very little calculated policy of any kind. When the matter is looked at from a strictly business point of view, and when all that is going on is borne in mind it is not too much to say that our timber is being treated almost as if it were a valueless product. It could not be much more wastefully dealt with as a national asset if the country were in a state of war or anarchy without a directing government. The student of economic history will find it interesting to compare the situation with what went on here in the days of unsettled titles, when the holders of land for the time being were eager to sell up anything portable, and disposed of forest trees for sixpence apiece.

A remedy possible.

*Important benefits
likely to accrue
from proper
organisation.*

Jones, 4746-49.

Perry, 649.

Dunn, 4463-7.
McRae, 1197-
1203.

Perry, 725.

Jernyn, 4717-18.

McRae, 1198-
1206.

82. This state of affairs is capable of being remedied to a very large extent if organisation can be introduced into the whole timber industry, including the production of timber by the grower and its conversion and handling by the trade. We have outlined some of the ways in which the organisation of production may be undertaken. With regard to the exploitation of the product, in the opinion of the best qualified witnesses most of the output of the existing woodlands in the rough might with much greater profit to all the local interests concerned be prepared and used at home. In the judgment of an extensive Scotch timber merchant, who spoke, as he said, "against his own interests," our spruce timber and Scotch fir should not go out of Ireland but should all be used here in the building trades. He would "organise the home against the foreign" in this country. Other qualified witnesses, speaking of the same and other varieties of timber, expressed the emphatic opinion that a large proportion of the foreign timber now imported might be displaced by Irish timber which would be sufficiently good, which would be cheaper to the local industry, and the production of which would be more profitable to the country, if only the Irish timber could be prepared in trade form and seasoned as it is in foreign saw-mills. The mills should aim at sawing to deals and other standard dimensions, and delivering as the foreign timber is delivered. If that were done, "between felling, trimming, hauling, cross cutting, carting to saw-bench, squaring, sawing to deal dimensions, piling for drying, selling and delivering, the amount of labour given to this country would be of enormous advantage. And in addition to this amount of preparation in the saw-mills, wood-working industries, like some of those now in the country, which are referred to in Part II., for the production of various classes of manufactured articles might be more extensively developed. Even with the present yield of Irish woodlands, an experienced manufacturing witness believed there is room for many more sawing and wood-working industries. Most of the inferior timber, of which there is an undue proportion now in the Irish woods, can only be profitably disposed of by being worked up in this way. When it is remembered how naturally well-managed woods give rise to industries as a concomitant in continental countries and even in these islands,† and how high the character of such industries stands from the social and national health points of view, the value of possibilities in this direction under a scheme of afforestation cannot be too strongly emphasised.

* Page 11.

† The beech woods (covering 50,000 acres) of the Cliburn Hills produced the High Wycombe furniture industries, which have now far outgrown the capacity of the woods to supply them. The whole output of these woods only supply a tenth of the timber now used in the High Wycombe industries.—Committee on British Forestry: Minutes of Evidence: Vermin 2117. See also Appendix G3 to present Report.

Organisation and Technical Instruction.

83. The first requisite for reform in this situation is the introduction of technical knowledge and skill into all branches of the industry, and amongst all grades of persons concerned in it, from the owners or managers of woodlands and of sawing and wood-working industries to the woodmen and factory hands; the next requisite is organisation. It has been suggested that here again the intervention of the State in some form is required; and we are of that opinion. If the State is to assume the responsibilities we think it ought in regard to forestry, it must take cognisance of the whole situation. To make a national system of forestry yield its full results to a country, the State must have regard to the exploitation of all the forest produce of the country, and not merely of that part of it which comes directly under its own hands. This is found to be the case in countries where State forestry is fully developed. In Ireland, where everything is unorganised in this branch of work, there is the greater need for the intervention of a body which can supply a directing and suggesting intelligence to the work as a whole. All that relates to the educational part of the subject, to the provision of technical knowledge and skill, of course belongs to the State; but to evoke the requisite organisation, whether amongst woodland owners or in the timber trade, which must go hand-in-hand with technical instruction, it seems clear that the State must also give the lead. In Ireland, in this matter, from the peculiar nature of the subject, there is no one else to take the initiative. To bring about reform, moreover, must in any case be a work of time, for which patience and continuity of effort will be required. The two main directions in which business organisation will be called for are amongst the owners of woodlands, whether private owners or County Councils, and in the saw-milling and wood-working industries. We have carefully considered the view expressed by several witnesses, and we agree with it, that very good results could be obtained if owners of woods in different districts could combine to work their woods and exploit the produce of them in common. We think that such a combination ought, wherever it was practicable, to be promoted in connection with the system of encouragements to private owners which we have described above.* By this means owners who individually would be handicapped in dealing with a comparatively small area, would be able to have the benefit of the management and service which are possible for large areas; and they would not only have the service of qualified managers and foresters, but the duties of the staff employed could be separated so as to enable an expert to concentrate on the particular type of work for which he was fitted, instead of having one individual trying to combine in his person the qualities and duties of several specialists. Such a combination could have its own nursery, and it could, moreover, have its own saw-mill, or wood-working industry, or a plan for marketing its timber at a common depot. It could adopt a common system of book-keeping and of record-keeping which would be uniform with that of other combinations of the kind throughout the country, and which, if the owners had availed themselves of the State encouragement provided, might be under the supervision of the Forestry Section. We think one of the duties of the Forestry Section when it was properly equipped, should be to take the initiative in promoting organisation of this kind. The training of the experts and foresters needed for this work, as well as that of the general scheme of afforestation, is now proceeding at the Department's Forestry Station at Avondale, and should, as we recommend, be further developed. Similarly, the Forestry Section should seek to promote organisation in the timber trade. Reference was made in the evidence to the action of the Department of Agriculture in holding conferences of the box-makers of the country, and by this means getting them to standardise the manufacture of fruit-, egg- and butter-boxes, a result of much importance both to the box-makers themselves and to the dairy, poultry and fruit industries. A similar series of conferences with the saw-millers might be promoted by the Forestry Section, and the Department would be ready to provide especially the smaller saw-mills and wood-working industries with expert advice as to the improvement of their machinery and the systems of standardising, grading, piling and general management, and with technical training for the hands employed. Such action would be a great aid to the

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INDUSTRY.

*Co-operation of
State, owners of
woodlands, and
proprietors of
wood-working
industries
recommended.*

M'Rae, 1234-39.
Mitchell, 1460-4.
Munro-Ferguson,
4284-5.
Pye, 1751-7.

M'Rae, 1240-54.
Munro-Ferguson,
4254-9.

Perry, 768.
Dunn, 4476-80.

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industry, and the Department is now legally empowered to furnish it if the necessary financial provision is made. For the exploitation of the produce of woods under its own direct management the Forestry Authority would have full discretionary power to take the same steps as any other proprietor.

PART VII.
TECHNICAL IN-
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RELATED TO
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PART VII.—TECHNICAL INSTRUCTION RELATED TO FORESTRY.

*Importance of
educational
facilities.*

Poebes, 115, 459-
41; Montague,
2513; M'Roe,
1234-37; Nisbet,
2722; Munro-
Ferguson, 4202;
Newman, 1907;
Doan, 2123;
Holehan, 2166-8;
Jennyn, 4716;
Perry, 727;
Dunn, 4476-80;
Dobbs, 1574-80.

84. Nothing has been more clearly demonstrated in the course of our inquiry than the importance of technical education applied over the whole field of this subject, whether for working woodmen, forestry experts, owners of woodlands, or those engaged in the timber industries and trade. This is the chief indispensable requisite, without which no great scheme of forestry development can be successfully undertaken. The evidence of those who dwell on the absence of knowledge about forestry amongst all classes in Ireland, on the lack of skill, or even of interest, in woodcraft amongst the rural labouring class who would be most directly employed in forest work, on the want of effective commercial and technical grasp of the business amongst actual or prospective managers of woods and wood-working industries, on the necessity for expert advice for county councils, private owners, saw-millers, and so forth, all leads to this conclusion. The Committee on British Forestry had the same experience in their inquiry. They reported that technical instruction was "on all sides emphasised as the first requisite in any project for the improvement of forestry," and it "consequently stood out as the cardinal point of the Committee's recommendations."

It will, of course, take a considerable time to diffuse through the country among the respective classes concerned the needed knowledge and skill, and to establish fully the educational machinery by which such diffusion can be promoted, and more than one agency will have to assist in the work. For example, as one witness truly pointed out, the boys in the rural National Schools at present scarcely know one tree from another; and while that state of things exists you cannot have the best preparation given to the class from whom the supply of skilled forest workmen should come. In regard to woodland employment, as well as to agriculture, the primary schools should, in our opinion, co-operate, by means of school gardens and "nature knowledge" teaching, in awakening an intelligent interest amongst their pupils in the callings which should furnish them with their best and most natural means of living. Again, it is when steady employment for skilled forest workmen is locally provided on the staffs of private owners, county councils, and others managing woods systematically in accordance with a national scheme, and with the assistance of expert advice from the Forestry Section, that young men of the rural labouring and farming class will lay their minds to learning and taking up forestry as a regular trade, and that the "tradition" of competent forestry, which is so necessary to an effective scheme, will become established amongst the people. In the meantime, most important progress may be made through the educational provision which it should be in the power of the Forestry Authority to organise, and of which, so far as it can be done in the absence of a national scheme of afforestation, the foundations have already been laid by the Department of Agriculture and Technical Instruction.

Montague, 2573.

M'Roe, 1231.
Montague, 2573.

*Avondale Forestry
School.*

Munro-Ferguson,
4215

85. By the institution of the Department's Forestry School at Avondale, County Wicklow, a considerable advance in this work has been made. The Chairman of the British Committee said of the Avondale School, in his evidence before our inquiry, that "he would sooner have it than all he had got in his own country." The school was opened in 1904 on an estate selected for forestry purposes after a careful inspection of a number of sites. The estate had once been the property of Mr. C. S. Parnell. The surrounding district is one of the best-wooded in Ireland, and is said to be scarcely equalled for the purposes of a forestry school. The estate has been laid out as a forestry station according to approved principles, "with forest plots" intended to demonstrate the growth

* Report of Departmental Committee on British Forestry, par. 13 [Cd. 1319], reprinted 1906.

and development into timber of all the more important species of trees under sylvicultural as distinct from arboricultural conditions, and with "pinctum" and "arborescens" to demonstrate the botanical character, the value, and other qualities of all the hardy trees which may be capable of thriving in the Irish climate. The regular teaching staff at the school is at present three in number, including Mr. A. C. Forbes, F.H.A.S., who was appointed in 1906 to act as lecturer at the school and otherwise assist the Department in the extension of forestry. The work at Avondale has been mainly directed in the first instance to the training of working woodmen as distinguished from the more advanced instruction suitable for forestry experts and landowners which was to be developed when this primary stage was organised. It was felt by the Department that the first duty of such a school was to furnish instruction for men who could be employed at present in Ireland, and who would supply a want that has been felt by owners of existing woodlands, and that would be the first want needing to be supplied when a scheme of national afforestation was determined on. The same necessity for this type of training in the first instance has been felt in Great Britain and was referred to by several witnesses before the Committee on British Forestry.* The idea underlying this policy is expressed in the following extract from the memorandum on the Avondale School given in the Appendices; and to this memorandum we would refer for other interesting particulars of the forestry station and school:—

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Appendix I. (3).

The main idea in view in connection with the school has been the training of men in such practical forestry as is carried out in well-managed woods in these countries. Before any practical advance towards the reforestation of Ireland can be made, men must exist who not only know the theory of planting, thinning, and felling woods, but are also able to carry out these operations with their own hands. Such work as the planting of waste land, or the clearing away of worn-out woodland and the formation of new plantations, requires the services of skilled labourers, and the latter can only be trained by men who themselves have handled the spade, the axe, and the saw, and are able to supervise the work of others in an intelligent and business-like manner.

The function of the Avondale Forestry School is neither that of training men in the theory of forestry alone, nor of manufacturing rule of thumb labourers, but in so combining theory with practice that the men there trained can adapt themselves to the varied conditions under which they will probably have to work in the future. To attain this end, applicants for training are received as apprentices, and practical work has been made the basis of the instruction. Science and theory are included in so far as they are necessary to supplement practical work and invest it with sufficient intelligent interest to destroy its monotony, and prevent mere rule of thumb practice. Before being admitted to the school a man must show that he not only has done manual work in the past, but is willing to do such work in the future.

The training of these apprentices occupies three years. The theoretical course for the first year is devoted to general and science subjects, including chemistry and physics, geology, botany, zoology, surveying, and mechanics, and for the second and third years to forestry. In 1906-7 eighteen apprentices were in attendance at the school.

86. It is thus evident that the right kind of training for the working foresters and woodmen needed for forestry operations has been provided. We have only to say on this head that, if an afforestation scheme be decided on, arrangements must be made, whether at Avondale or in connection with some of the woodlands to be acquired by the State, for training a larger number of such forest workers than is now dealt with.

87. With the adoption of a national forestry policy will also come the need for an extended provision for higher forestry instruction. Adequate measures will have to be taken for the training of the future experts, forest officers,

Higher instruction
in forestry.

* I desire to call attention to the difficulty I have myself experienced, and which I know to exist to a large extent, of obtaining the services of skilled foresters. I have had to make several changes in the man in charge since the Vyrnwy works were completed, and I have found the greatest difficulty in getting suitable men to take charge of the planting. It seems to me that there is a very large field for the training of men skilled in timber growing, and that a great deal more might be done than is being done now in the way of qualifying men for such work, especially for the work of an ordinary forester—I mean a working forester—by some system of apprenticeship or otherwise.—Evidence of Mr. J. Parry, Chief Engineer of the Liverpool Corporation, who had to deal with the large plantations carried out in the Vyrnwy Valley, in connection with the Liverpool water supply.—Q. 3645. Minutes of Evidence Committee on British Forestry, page 131.

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and instructors, who will be required in a State scheme, for the training of landowners and others who may have extensive woods to manage and for enabling Irishmen to compete successfully for Indian and colonial forest appointments. Some provision has already been made for higher instruction, the Department of Agriculture intending to use the Royal College of Science in connection with Avondale for this purpose. Last year scholarships were offered for the first time at the Royal College of Science to students of forestry. The full College courses in this subject are intended to be of the same standard as those in the Faculty of Agriculture. But a provision which was intended to meet present circumstances in Ireland, when the demand for forestry experts is very limited, and when the students seeking such a course would be mainly those intending to qualify for Colonial or Indian appointments, will have to be much more extended if it is to meet the requirements of a national scheme of afforestation. We think that the Forestry Authority should be placed in a position to make adequate provision, at the Royal College of Science, by means of scholarships and otherwise, for the higher training of a sufficient number of students for this purpose, and also for promoting scientific research and investigation in connection with forestry.

Public lectures.

Appendix I, (4)

88. With a view to educating the public mind generally in regard to the national importance of forestry to the country, the Department have arranged public lectures on forestry and have compiled and distributed widely leaflets, circulars and other literature dealing with the subject. This work ought also to be extended.

*Industrial and
commercial
instruction.*

89. With regard to the technical instruction and advice needed for the improvement and extension of wood-working industries, and for the improvement in the business methods of those engaged in the handling of Irish timber generally, as referred to in paragraph 85, this matter belongs rather to the general subject of technical instruction, which is dealt with by the Technical Instruction Branch of the Department. The state of things, brought out by our inquiry, in the organisation and methods of the timber trade is but part of the conditions of Irish business with which the commercial education organised by the Department is intended in some measure to deal. We would suggest that the Department should take steps, in connection with their forestry operations, for applying technical and commercial instruction more directly to forest industries and the timber trade than they have hitherto found it advisable to do under their regular schemes of technical instruction.

**PART VIII.
MISCELLANEOUS
CONSIDERATIONS.**

*Amendments in
Land Purchase
Acts.*

PART VIII.—MISCELLANEOUS CONSIDERATIONS.

LEGISLATIVE AMENDMENTS.

90. One factor of great importance has been made evident in the course of this Report—that is, that legislation is not necessary in order that effective steps may be taken to check to a great extent the injurious processes that are now at work, and to begin a scheme of positive reform. We are advised that legal powers sufficient for this purpose are already possessed by the Department of Agriculture as Forestry Authority, and by County Councils under the Technical Instruction Acts, 1891 and 1899, the Agriculture and Technical Instruction Act, 1899, and the trustee section of the Land Act of 1903. What is most urgently called for at the moment is that a Forestry Authority should be able to purchase and manage the woods which are now a sort of obstacle to the sale of estates under the Land Act, and which the owners are tempted to sell to timber merchants through the pressure of circumstances described in Part I; and that the Forestry Authority or approved local authority, should similarly be able to acquire and plant lands suitable for forestry on estates which come for sale under the Land Acts or otherwise. To accomplish this in a considerable measure, and to enable the scheme of afforestation to be undertaken and a Forestry Section to be fully equipped, would require only the provision of funds, without changes in the law. But, though this machinery could be set to work at once and could accomplish a great deal, yet it will not be fully effective until the law is amended in certain respects. The principal amendments required are:—

- (1) A provision to prevent, with due reservations, the cutting down of plantations on estates while negotiations are pending for sale, or where advances have been made under the Purchase Acts.

- (2) A provision giving the Land Commission, also with suitable reservations, power to exclude from a holding any plantation or any land suitable for planting with a view to its sale to a Forestry Authority.
- (3) A provision giving the Forestry Authority compulsory powers, with the reservations described in paragraph 62, for the acquisition of grazing rights on lands purchased for forestry purposes.
- (4) A provision for giving the County Councils powers to build cottages for woodmen in connection with plantations managed by them.

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In addition to these amendments affecting forestry only, the Committee are strongly of opinion that provision should be made by some means for enabling some authority on behalf of the general community to deal effectively with the obligations to secure good management and prevent abuse in respect, not only of woods but of drainage, estate roads, and similar matters common to estates such as are referred to in paragraphs 26, 55, and 64, as well as other obligations connected with the use of landed property which pass from the selling proprietors to the State with the transfer of land under the Land Purchase Acts.

FORESTRY AND THE UNEMPLOYED PROBLEM.

91. The question of promoting forestry as one of the means of dealing with what is called the problem of unemployment, having been brought to our notice, we think it right to state our opinion on this question. It is, emphatically, that forestry cannot be considered as a specific for curing the evil which is commonly understood when this problem is spoken of, that of the chronic disemployment, especially in large cities, of large numbers of people belonging to different trades or callings. That the promotion of forestry on an adequate scale will provide a great deal of employment is unquestionable, and that is one of its principal advantages to a country. But such employment would be employment naturally forthcoming from the plantations and woods for the agricultural population in their vicinity, and it would be employment for an industrial population, more or less rural, forthcoming from the industries and commerce which may be developed in connection with the conversion and handling of the forest produce. This sort of employment cannot be provided on a large scale at once. It must be developed with steadiness and system, and above all it must be on sound economic lines. It is abundantly evident, from what has been said already in this Report, that one of the chief requisites for the labour required in forestry operations is skill in every grade, from that of the rural labourer brought by training to some knowledge of woodcraft, and that of the worker at the saw-mill, up to the forest experts and factory managers. It is, moreover, clear that forestry can only be successfully carried out when, in addition to skill, there is the most thriffling management applied right through the long period of rotation. This, therefore, in our opinion, is not an industry which lends itself to furnishing temporary and irregular employment to those who may for the time being be without work in other callings. It would, in our opinion, be gravely to prejudice and imperil the soundness of a scheme of national afforestation in Ireland to look at it in this light, and to mix it up in any way with a problem of quite another kind, which is serious enough in itself, but which, as it seems to us, belongs to a larger question than that of ordinary industrial development.

*Skilled labour
and management
needed for forestry.*
Stafford-Howard,
3310.
Munro-Ferguson,
4202.

TECHNICAL POINTS.

92. We have purposely avoided in this report treating of purely technical questions, as to which the judgment of an efficient Forestry Section should, in our opinion, be left free. But we think it well to record that there are some such questions which have been brought particularly under our consideration.

*Matters for
Forestry Section.*

93. It has been suggested, with regard to the varieties of timber to be grown, that the Forestry Section should adopt as its policy for the first rotation, that of covering the new forest area, as far as practicable, mainly with

*Quick-growing
timber for the first
forest crop*

PART VIII.
MISCELLANEOUS
CONSIDERATIONS.

Henry, 4924,
et seq.
Nubet, 2738.

the quicker-growing varieties of coniferous timber, though mixed, of course, with otherspecies, leaving it to those who have to settle the subsequent rotations to determine whether to continue or change the crop in accordance with the circumstances of the time. The chief reasons urged for this policy are that such timber will give the earliest returns; that the returns are more certain; and that conifers grow successfully on inferior classes of land. There is now, and there is bound to be for a very long time to come, a sure demand for well-grown coniferous timber at remunerative prices. Without prejudicing the question by a positive recommendation, we may say that there appear to us to be good reasons for the policy suggested.

Natural regeneration.

Forbes, 112-4;
Fisher, 1454;
Mitchell, 1422-
25; Nubet,
2753-9; Henry,
4981-2.

94. The question of natural regeneration or a method of renewing plantations from seed shed by the mature crop versus the method of clear cutting and replanting has also been mentioned several times. It is the method chiefly adopted in many of the Continental forests, and it is also followed in certain woods in Great Britain, such as those of the Chiltern Hills. When and where it becomes practicable it is undoubtedly the cheapest of all the modes of forest renewal, reducing the cost of maintenance to practically that of the paying of rates and the keeping up of fences. But we have omitted it from our calculations; because in Ireland new woodlands have yet to be established, and natural regeneration does not come into play as an effective factor until the trees approach maturity and the time for felling has arrived. Among the classes of woodland for which it is a suitable method of renewal, such as ash, beech, Scots pine, it will mean a sensible reduction in the cost of maintenance, and a consequent increase in the returns, as calculated in the estimates given in Part IX. dealing with the finance of the scheme. But it is too indeterminable a quantity to be taken into account in these estimates, which, moreover, we prefer to keep on the safe side.

TRANSIT RATES AND FACILITIES.

Vice-Royal Com-
mission on Irish
Railways.

95. The question of rates and facilities for the transit of timber and of manufactured timber goods both by rail and sea came under the notice of the Committee during our inquiry; and there is no doubt that this question most vitally affects this as it does other Irish industries. But as there is another Commission of Inquiry now at work which has been specially appointed to investigate the whole transit problem of the country we felt that it was unnecessary for us to enter upon this part of our subject.

RATING OF WOODLANDS.

Pigot, 621-3;
Dobla, 1638-9;
Scott-Kerr, 1649;
Evans, 3943-6;
Finagone, 6470.

96. Attention was directed by several witnesses to the question of rating of woodlands, and to the fact that the payment of rates for many years before the woods can possibly prove remunerative acted as a deterrent to planting enterprise. It was suggested by these witnesses that an encouragement to planters would be given if woods were partially or entirely exempt from rating during the first twenty or thirty years. At the present time, however, woodlands in Ireland, are treated for rating purposes as ordinary agricultural lands, assessable on the valuation made without reference to the timber. In the circumstances the question of rates does not appear to be a serious factor affecting forestry operations, so far as this country is concerned.

Appendix 13.

PART IX.—FINANCE.

GENERAL CONSIDERATIONS.

PART IX.
FINANCE.*General
considerations
affecting
Estimates.*

97. In working out the financial part of this problem it is necessary to assume a hypothesis, some of the data for which must be conjectural. This is inevitable. We cannot, as we have seen already, at this stage, tell the area of land and woods that may be ultimately brought into the scheme. We cannot definitely estimate the price at which the area may be acquired; nor the length of time which it may take to acquire it. For the cost of planting, management and other working expenses a larger class of data are available in forming an estimate; but this, too, must be a variable item influenced by many circumstances. Still less can an estimate of returns be fixed. If the tendencies now appearing in the world-market, that are referred to in paragraph 31 continue, the price of timber will reach a much higher point, and the returns from forestry will be correspondingly valuable. On the other hand, in the long period which has to be taken into account in a scheme of forestry, science and invention may find substitutes for timber which to some extent would mitigate the pressure of the demand—although it must be noted that, as the growth of mechanical invention has hitherto only had the effect of enormously increasing the use of forest produce, this latter alternative seems the less likely of the two. Again, the condition in which the transit facilities of the country may be when woods now to be planted will have matured is a factor of very great influence which cannot be gauged; while the nearness to or remoteness from transit facilities of particular woods, the difficulties of getting the timber out of them as determined by the character of the ground, as well as the quality of the soil, will affect the relative values of the returns of some plantations as compared with others. But few of the elements of the calculation at this stage can be fixed, and it is quite impossible to adopt any estimate which cannot be evilted at on some ground. Nevertheless it is essential, for the understanding of the problem, and also for the taking of any practical steps to deal with it, that a calculation should be made and set as an illustration before the eyes of those concerned. Such a calculation, on a safe and useful basis, it seems to us can be made. We have carefully examined all the data within our reach, and we believe that the following estimates, which deal in averages, are well within the mark. They are based on current costs and prices.

98. We give two alternative estimates for the 200,000 acres of State forest area; an estimate for the 50,000 acres of smaller woods managed by County Councils; an estimate for the similar area of larger woods managed directly by the State; an estimate dealing with encouragements to the private owners; and a summary estimate of the annual provision required for the general scheme.

STATE FOREST ESTIMATES.

99. The scheme for creating a State-managed wooded area of 200,000 acres in large blocks of mountain land may be financed in either of two ways:—

*Estimates I (a)
and I. (b).*

(a) By the State supplying directly, as is done in most countries, the funds for the necessary expenses to the Department acting as Forestry Authority, and receiving the income from the scheme when it became available. In this case the money for the purchase of the land would be advanced under the Land Purchase Act, the Forestry Authority acting as trustee under Section 4 of the Act of 1903, and a Parliamentary vote would be annually made to the Forestry Authority to cover the repayment instalments, and to meet the other expenses of the scheme.

(b) By the Commissioners of His Majesty's Woods, Forests, and Land Revenues, in co-operation with the Irish Forestry Authority, and with the sanction of the Treasury, investing in afforestation in Ireland the proceeds of the Irish Quit and Crown Rents.

We have made alternative estimates [I.(a) and I.(b)] for these two modes of financing this part of the afforestation scheme. The principal differences between these estimates are consequent on the fact that in the proceeds of the Quit and Crown Rents there is available a capital sum which would suffice to enable the land to be paid for at once, and that under the other mode the payment for the lands would be met by annual purchase instalments.

PART IX.
FINANCE.

ESTIMATE I (a).—STATE FOREST.

Estimate I. (a).

Financial Scheme for the acquisition, planting, and maintenance of a new forest area of 200,000 acres directly by the State.—Funds to be supplied by Parliamentary vote, money for the purchase of the land being advanced under the Land Act of 1903, and repaid by annual instalments.

100. Under this scheme the State directly finances and receives the revenue, the area planted becoming State forest in the full sense. The figures set out in the Table opposite are based on current rates and prices. In the forest plan a certain number of centres are dealt with each year, and a covering sum of £500 for working expenses, including planting, fencing, payment of rates, &c., is allowed for each centre. As the area of land acquired cannot be planted at once, but in process of the rotation of the forest plan, it is assumed that a revenue from grazing-rights over a proportion of the area would be available until it is planted. No allowance is made for a possible revenue from shooting rights which should become available to some extent after grazing rents had ceased. The scheme does not take account of natural regeneration as a mode of restocking after cutting. The administrative staff needed for this scheme would also be available for the other parts of the national scheme of afforestation, including the management of any existing woodlands, acquired by the State, as well as the expert advice and supervision required for County Council forestry work, and for schemes undertaken by private owners. This should be specially noted in connection with the other estimates.

The scheme is based on the data furnished in the Table opposite, viz. :—

(1.) That 200,000 acres of plantable land are acquired within 10 years, at the rate of 20,000 acres a year. (2.) That in order to acquire this area of plantable land we consider that from 300,000 to 350,000 acres may need to be actually purchased. The price of the total area we assume would be from £2 to £3 an acre, and the entire cost apportioned on the 200,000 acres forming the proportion of better or plantable land on this total area would average £4 an acre. (3.) That the purchase money required is repayable on Land Act (1903) terms by annuities of $3\frac{1}{2}$ per cent. (4.) That the cost of administration averages for the first five years £3,500 annually, and reaches £10,000 per annum in the 10th year, at which figure it becomes stationary. (5.) That the cost of planting and working expenses over the total area averages £500 per annum for each centre dealt with, and reaches a fixed maximum expenditure of £60,000 a year in the 40th year of the working of the scheme. (6.) That three-fourths of the acreage acquired is available for grazing until planted, and that the grazing rent averages about 1s. 9d. an acre on the total area, or 3s. an acre on the proportion of the area fit for planting. (7.) That the returns for thinnings and fellings average £15,000 a year in the third decade; £45,000 in the fourth; £90,000 in the fifth; £150,000 in the sixth; and a fixed sum of £225,000 a year in the seventh and succeeding decades. It is calculated that—

In the first decade the mean annual expenditure would be £17,925.

In the second decade the mean annual expenditure would be £40,125.

In the third decade the mean annual expenditure would be £48,000.

In the fourth decade the mean annual expenditure would be £40,500.

In the fifth decade the mean annual expenditure would be £6,000.

From the last-mentioned period onward the receipts would exceed the expenditure—

In the sixth decade by an annual sum of £54,000.

In the seventh decade " " " " £129,520.

In the eighth decade " " " " £146,680.

In the ninth and succeeding decades by an annual sum of £155,000.

The total net amount sunk in the first fifty years, until receipts began to exceed the expenditure, would be £1,525,500. Adding to this sum compound interest on the various items calculated at $2\frac{1}{2}$ per cent. to the fiftieth year, the total would amount to £3,267,600.

The area would be fully stocked and yielding its normal return in the 80th year, and from that period onward the net return of £155,000 a year would represent $4\frac{1}{2}$ per cent. per annum on the £3,267,600, and leave a surplus of £8,000 a year as a margin for variation or further developments. At that time the capital value of the 200,000 acres of woods, estimated at the present price of timber, would be £7,000,000. Adding the value of the land at £4 an acre, the total value of the property would be £7,800,000.

ESTIMATE I (b)—STATE FOREST.

Financial Scheme for the acquisition, planting, and maintenance of a new forest area of 200,000 acres directly by the State—Funds to be supplied from the Irish Quit and Crown Rents.

PART IX.

FINANCE.

Estimate I. (b).

101. All the data for the preceding Estimate hold good for this Estimate, except that the funds would be supplied from the Irish Quit and Crown Rents.

The chief financial feature of this plan, as distinguished from the other, is the elimination of the annual purchase annuities by reason of a capital sum being available for buying the land. For a century and half, from the time of Charles II., the Quit and Crown Rents of Ireland amounted to about £60,000 a year. Between the years 1822 and 1907 about half those rents were sold out or redeemed. It will be seen in the Appendices that between 1822 and 1827 the sales realised £81,748; between 1827 and 1863, £294,649; and between 1827 and 31st March, 1907, £419,665. Thus the proceeds of the sales of those rents amount to £796,062, which would exactly cover the cost of purchasing for cash the contemplated area of land for Irish State woods. The amount received for unredeemed Irish Quit and Crown Rents is still about £30,000 a year. This sum, or the interest on the proceeds of further redemptions, would cover the working and administrative expenses of the present scheme and would leave sufficient balance to pay the purchase annuities in Estimate III.

Appendices 2-6.

Appendix 4.

In the case of the State Forest scheme, in accordance with the present estimate, during the first 40 years, working and administrative expenses will exceed receipts. But, as will be seen from the Table opposite, the highest net expenditure of any one year, which will occur in the twentieth year, is £24,250.

In the first decade the mean annual net expenditure would be £3,625.

In the second decade the mean annual net expenditure would be £14,125.

In the third decade the mean annual net expenditure would be £22,000.

In the fourth decade the mean annual net expenditure would be £14,500.

The net total cost for 40 years on fencing, planting, etc., and administration would amount to £542,500.

At the close of forty years the annual receipts would begin to exceed the working and administrative expenses.

No interest can be paid on the purchase-money of the land during the same period. Those arrears of interest will amount to £781,000, which, with the £542,500 working expenses, makes a total outlay of £1,323,500 to be accounted for. The various items of that sum, calculated at 2½ per cent. compound interest from the date of outlay to the close of the fortieth year, accumulate to £2,093,120. To that sum should be added £800,000, the original cost of the land, making a total of £2,893,120; interest should be paid on that total from the close of the fortieth year, and, at 2½ per cent, it amounts to £79,560 a year.

After the fortieth year this scheme shows a surplus beyond its working expenses.

In the fifth decade the total net profit for the decade amounts to £200,000

In the sixth decade to £800,000

In the seventh decade for the first seven years to . . . £1,085,000

These items of profit during 27 years total . . . £2,085,000

The £79,560 interest during the same 27 years totals . . £2,148,120

The completed stage of the scheme, when the area would be fully stocked and yielding its normal return, would be reached in the 68th year, and the net annual profit shown by the Table from that period onward of £155,000 on the £2,893,120, or—allowing £106,880 as a margin of expenditure—on £3,000,000, would be at the rate of 5 per cent. per annum with a surplus of £5,000 a year for contingencies.

To look at the matter in another way—the proceeds of the redeemed half of the original Quit and Crown Rents, viz., the capital sum of £796,062 would be permanently sunk in this scheme. About £13,500 a year more from the unredeemed rents would be sunk for 40 years, but at the end of that period would be available for other purposes. No interest would be received from the outlay for 40 years. From the 40th to the 67th year interest at 2½ per cent. would be paid, and after the 67th year the £800,000 permanently sunk, and the £13,500 sunk for 40 years, would return £155,000 a year.

The capital value of the 200,000 acres of woods after 67 years would be approximately £7,000,000. Adding £800,000, the original price of the land, the total value of the property would be £7,800,000.

ESTIMATE II.—COUNTY COUNCIL WOODS.

Scheme for acquisition and maintenance of 50,000 acres of smaller existing woods by County Councils, under supervision of Central Authority.

Estimate II.

102. The expenses of working the smaller woods are proportionately higher than those of working larger areas. In most instances the land under these woods can be turned to no use for any other purpose, and consequently cannot be said to have a market value. In many cases the woods are overthinned, or covered with scrub and stunted timber which has no commercial value, and the presence of which on the land materially increases the cost of preparing it for replanting. For such woods the price ought to be nominal, or they should not be purchased. In other cases woods may contain valuable young timber for which a timber merchant at present may be prepared to offer a good price, and which, if they could be saved from being cut at this stage and allowed to mature, would acquire eventually a much higher value. In such cases it should be safe for a County Council to purchase the woods at a price at least as high as the commercial value to the timber merchant. If the acquisition of the woods by County Councils is conducted on these principles, and in accordance with the advice of the Central Authority, and if the cost of central administration and advice, as distinct from local administration, is borne by the Central Authority, they should ultimately prove a source of profit, as well as of indirect local advantage to the County Councils.

Taking the good and the bad, and including the price of the saleable timber, it may be estimated that these 50,000 acres might be acquired at an average price of £8 per acre. On this estimate the purchase annuity for which the County Councils would be liable would be roughly 5s. per acre, which, for the area of 50,000 acres, would be £13,000, or the equivalent of one-third of a penny per £1 on the rateable valuation. The net expenses of maintaining the area may be estimated at 3s. an acre, or £7,500, equal to one-fourth of a penny per £1 on the valuation. The cost of replanting should be covered by the price of such timber as was saleable.

The value of these woods at present prices of timber should at the end of fifty years be £1,750,000.

It may be well to illustrate the effect of this scheme from the point of view of the ratepayers, by taking an average county as an example. Let us take for this purpose King's County.

A rate of $\frac{1}{2}$ d. in the pound in King's County will produce £515 per annum. This would pay the instalments on the purchase money and the cost of management of, in round numbers, 1,200 acres (5s. per acre instalment and 3s. per acre expenses = 8s. per acre). If the Council were able to acquire woods containing a fair proportion of valuable timber, the sale of which would provide funds out of which instalments and expenses of management could be defrayed, of course a larger area could be acquired without increasing the rate. Taking the least favourable case, say, 1,200 acres of woods that are not in a state to become remunerative in less than twenty-five years—at the end of twenty-five years an annual return of from 7s. 6d. to 10s. per acre may be reckoned on, covering the annual expenditure, and the $\frac{1}{2}$ d. rate would not be required. At the end of fifty years, and continually thereafter, an annual return of 20s. per acre per annum can fairly be reckoned on, which, after deducting the purchase annuity, cost of management, &c.,—say, 10s. per acre per annum—would, in the example here taken, mean a net revenue of £600 per annum, giving relief from taxation, to the extent of over $\frac{1}{2}$ d. in the pound between the fiftieth and sixtieth year, and of over $\frac{3}{4}$ d. in the pound after the purchase instalments had been fully paid off. More important, however, to the district than these results would be the advantages which cannot be expressed in figures, namely, those of a good local supply of timber, employment for labour in the winter months, the establishment of wood industries, the improvement in the appearance of the county, the valuable shelter to adjacent lands, and in some places where the bogs are being worked out the advantage of local fuel. Possibly, a further revenue in relief of taxation from shooting rents might also be reckoned on.

ESTIMATE III.—EXISTING WOODS TAKEN OVER BY THE STATE.

PART IX.
FINANCE.*Estimate III*Scheme for the acquisition and maintenance of 50,000 acres of existing woods
directly by the State.

103. The same observations as regards the different qualities of woods, and as regards price, apply here as in Estimate II. The average price we assume as practicable for woods and lands is £8 per acre. Thus, the purchase annuity here would be £18,000. As the size of the woods will be larger than those of Estimate II, the working expenses in this case would be balanced by the income from the thinnings and clear-fellings. The balance of the unredesigned Quit and Crown Rents referred to in Estimate I (b) would suffice, if these moneys be applied to Irish forestry, to cover the purchase annuities in this case. The administrative expenses are included in the cost of administration in Estimates I. (a) and I. (b). It may be taken that the surplus of returns over expenditure would begin at the fiftieth year and would amount to, say, a fifth of the surplus in Estimate I (a).

The profits under Estimate III. would then be approximately :—

In the 6th decade,	£5,000
" 7th "	£21,950
" 8th "	£33,000

when the normal continuous returns from the scheme would be reached. The value of the woods at the end of fifty years, at present prices of timber, would be £1,750,000.

Estimates I. (a) and III. combined

104. After the fiftieth year the combined profits under Estimates I. (a) and III. from woods managed by the State would be—

*Estimate I. (a) and
Estimate III.
combined.*

For the 6th decade,	£50,000
" 7th "	£151,470
" 8th "	£179,680
" 9th and succeeding decades,	£188,000

ESTIMATE IV.—SCHEME FOR PRIVATE OWNERS.

Estimate IV.

Scheme of encouragement to private owners.

105. This Estimate provides for :—

- (a) Free advice and inspection of all woods and lands to be provided by Central Authority, [cost included in sum allowed for Administration in Estimates I. (a) and I. (b)].
- (b) Plants, &c., at cost price to smaller owners and expert instruction: supplementary grant for this purpose to present horticultural schemes of County Councils—£200 per County Council, £6,600
- (c) Extension of Board of Works' system of loans.*

ESTIMATE V.—FORESTRY EDUCATION.

Estimate V.

106. This Estimate provides for :—

- (a) Technical advice for all purposes of State and local forestry schemes.
- (b) Development of the teaching of forestry at Avondale and at the Royal College of Science so as to provide instruction for the training of all grades of forest workers, including higher instruction for experts, forest officers, and owners of woodlands, also provision for scientific research relating to forestry, £7,000

* See Part V.

PART IX.
FINANCE.

SUMMARY OF PROVISION NEEDED FROM PARLIAMENTARY VOTE.

(A.) If Scheme is directly financed from Vote

Summary.

107. In the alternative of the scheme of national afforestation being directly financed by the Exchequer, provision for the purchase annuities for the 200,000 acres of State forest as in Estimate I (a), and for the purchase annuities of the 50,000 acres of existing woods acquired by the State from private owners, as in Estimate III., would have to be included in the Parliamentary Vote. The surplus of returns over expenditure on the working of the 50,000 acres of existing woods would become available after the fiftieth year, and would then be added to the surplus shown on Estimate I (a). The total mean annual provision from the Vote which would be needed for the scheme, including the item of aid given through County Councils, and of forestry education and research mentioned in Estimates IV and V may therefore be summarised as follows:—

	Purchase Annuities	Other Expenditure (Est. I)	Surplus of Receipts over Working and Administrative Expenditure	Total Provision required
	£	£	£	£
1st decade (mean annual)	27,300	17,225	—	44,525
2nd „	39,000	27,725	—	66,725
3rd „	39,000	35,600	—	74,600
4th „	39,000	28,100	—	67,100
5th „	39,000	—	6,400	32,600

After the fifth decade the scheme provides a surplus over both purchase annuities and working and administrative expenses, which increases until the area is fully stocked and yielding its normal return at the close of the eighth decade.

(B.) If Scheme is chiefly financed from Irish Quit and Crown Rents, and partly from Vote

108. If the Quit and Crown Rents be used to the extent indicated in Estimate I. (b), the purchase annuities for the 200,000 acres of State forest would be eliminated, and out of the balance of the unredeemed Rents the purchase annuities for the 50,000 acres of existing woods bought by the State under Estimate III. would be provided, leaving a sum of about £3,500, which we do not propose to ear-mark in this summary, but indicate it as a reserve for contingencies. The only items therefore to be met from the Vote under this plan would be those in Estimates IV. and V. The provision needed from the Parliamentary Vote might then be summarised as follows:—

	Expenditure under Estimates IV and V	Net Receipts under Estimate III	Provision required from Parliamentary Vote.
	£	£	£
1st decade (mean annual), .	13,600	—	13,600
2nd „	13,600	—	13,600
3rd „	13,600	—	13,600
4th „	13,600	—	13,600
5th „	13,600	—	13,600
6th „	13,600	5,000	8,600

After the sixth decade a surplus of receipts over purchase annuities and expenses is available.

SOURCE OF FUNDS FOR THE SCHEME.

PART IX.

FINANCE.

109. With regard to the source from which the funds for this scheme should be provided it is perhaps not our function to make suggestions. Having demonstrated the need for a comprehensive scheme, outlined its character and estimated its financial requirements, we might assume that our main duty is discharged and that it is for others to settle how the scheme, if it be accepted, is to be financed. Nevertheless, as we have shown in the foregoing estimates, we have taken note of certain alternative methods of financing the scheme. One financial source in particular, namely the Irish Quit and Crown Rents, has been pressed upon our attention and has been made the subject of resolutions of the Council of Agriculture and other public bodies, and has been otherwise much discussed in Ireland. We thought it right, therefore, to make some inquiry into this question, and in all the circumstances we feel bound to offer some observations on it.

The Quit and Crown Rents considered.

110. The Irish Quit and Crown Rents are part of the hereditary revenues of the crown which it has been the custom since the reign of George III. for the sovereign to surrender to Parliament at the beginning of each reign in return for a fixed Civil List. Particulars with regard to these and the general revenues of the crown in Great Britain and Ireland will be found in Appendices 2-6 and in the evidence given by Mr. Stafford Howard before the Committee. In the King's Message to the Irish House of Commons surrendering the Quit and Crown Rents to the Irish Parliament, it was stated that this revenue was to be administered for the time being "in such a manner as may best conduce to the utility and satisfaction of the public."* The same expression was used with reference to the crown revenues coming from England and Scotland in the King's Message to the House of Commons of Great Britain,† and has determined the acts of the Imperial Parliament which have been framed on this subject at the beginning of each reign since the union of the two Parliaments. The capital of the crown revenues remains the reversion of the sovereign, and it is a principle of their administration that the capital must not be impaired in the efforts to produce annual income. No part of it can be alienated from the crown, and if for any purpose any part of the funds are applied to any other use the amount must be made good from the Consolidated Fund. At the same time, in administering the revenues of the crown the Commissioners of Woods, while observing the first object of so managing these revenues as to safeguard the capital and produce as much income as possible, are not obliged solely to have regard to this object and nothing else. As Mr. Stafford Howard explained in answer to questions, they are entitled to take other considerations into account, such as the general welfare of the country, and they have done so in many of the investments and applications they have made of this property. The most recent instance of such action is the purchase of the Inverfiever estate for the purpose of promoting forestry in Scotland. This policy seems to be in accord with the words of the King's Message that the revenues shall be administered in such a manner as shall "best conduce to the utility and satisfaction of the public."

Principle governing administration of Quit, &c., Rents.

Stafford Howard,
3119-3380.

Appendix 6,
page 237.

Stafford Howard
3147, 3323-
33, 3344.

111. Dealing with the Quit and Crown Rents since the period only when it became the custom to surrender them in return for a fixed Civil List, at the beginning of each reign, they do not appear to have been applied with this policy in view in a direct way so far as Ireland is concerned. Once the annual income

Application of proceeds of Quit, &c., Rents.

* Quoted in Appendix 6.

† *Hansard (1753-1765). Vol. 15, p. 295. Resolution of the Commons respecting the hereditary Revenues of the Crown. (1762), November 25th. The Chancellor of the Exchequer, by His Majesty's command, acquainted the House, "that His Majesty, ever desirous of giving the most substantial proofs of his tender regard to the welfare of his people, is pleased to signify his consent that, whenever this House shall enter upon the consideration of making provision for the support of His Household, and the honour and dignity of his Crown, such disposition may be made of His Majesty's interest in the hereditary revenues of the Crown as may best conduce to the utility and satisfaction of the public."*

PART IX.
FINANCE.Appendix 2, page
285.Stafford Howard,
3148-99.

from these rents enters the Consolidated Fund it loses its identity, and we are informed of only four cases, involving a total sum of £77,601, in which any of the land revenues of the Crown has been invested in connexion with an Irish purpose since that period. These were the cases of the purchase and improvement of certain properties lying between the Liffey and the Royal Barracks, an expenditure of £46,593; a sum of £14,230 invested in purchases at Inchicore, Longmeadows, and Chapelizod in order to preserve the amenity of the Phoenix Park; £1,150 in the purchase of leasehold interest in premises at the Curragh; and £15,636 invested in Bank of Ireland Stock. All the remainder of the hereditary revenues of the Crown, including the Quit and Crown Rents, have been spent or invested in Great Britain, and when the total of these revenues is borne in mind, the amount applied in Ireland, after making all allowances, may fairly be described as disproportionate. Of course it will be argued, as Mr. Stafford Howard indicated, that Ireland receives back in other ways the equivalent of her proportion of these revenues. This consideration, however, raises a question into which we do not propose to enter at all, the question of the financial relations between Great Britain and Ireland. We go no further with regard to the Quit and Crown Rents than to point out that it is a fund coming entirely from Irish sources, and to say that, in our opinion, the contention is sound that, while being administered with due regard to the prime consideration of safely conserving the capital for the crown and producing a permanent income for the public funds, it is but right and proper that such administration should be done with a view to conducting as far as possible to the utility and satisfaction of the public of Ireland. Indeed we think it follows logically as a principle, from the nature of the case, that unless it can be shown that it is impossible safely and profitably to invest this part of the hereditary revenues in Ireland, it should not be invested anywhere else. We are speaking only of the period since the Act of George III., when it became the custom for the crown to surrender these revenues. But if we take note of the previous history of the Quit and Crown Rents, as it is legitimate to do, the contention is strengthened. The lands from which these rents were mainly derived, and which were granted, with obligations as to their user for the public benefit, have been the subject in a particular way of past administrative neglect and abuse. A part of the land revenues of the crown in Great Britain consists of the crown woods and forests. There are now no crown woods in Ireland. But there were crown woods in Ireland, and on these confiscated lands of which, chiefly owing to the neglect of the State, not a vestige now remains; and the Quit and Crown Rents are but the remnant of a crown property which was intended, under express stipulations, to be administered for the benefit of the general community.

Appointment of
Vice-President of
Department of
Agriculture as a
Commissioner of
Woods, &c.

112. On these general grounds we think the feeling which urges that the Quit and Crown Rents should be invested in financing a national scheme of forestry in Ireland is a justifiable one. This source of revenue represents (1) a present capital sum of £796,062, the result of redemption, (2) whatever interest this sum may be expected to earn, and (3) a present annual income of £30,824 coming from as yet unredemmed rents. Should it be determined to apply the Quit and Crown Rents in this way, we think that the precedent by which the President of the Board of Agriculture and Fisheries in Great Britain is made *ex-officio* a Commissioner of Woods and Forests for the purpose of managing the principal agricultural lands of the crown and the development of small holdings and allotments should be followed, and that the Vice-President of the Department of Agriculture and Technical Instruction should be appointed *ex-officio* a Commissioner of Woods and Forests, with special reference to the application of the Quit and Crown Rents to Irish forestry. This arrangement would enable the Irish Forestry Authority, of which the Vice-President of the Department is the ministerial head, all the more effectively to act as agent for the Woods and Forests Commissioners in Ireland. If this view of the Quit and Crown Rents be adopted, the portion of the scheme to which they would most fittingly be applied is, as we have shown, the creation of the new State forest of 200,000 acres, which is dealt with in Estimates I (a) and I (b) and the acquisition by the State of 50,000 acres of existing woods as shown in Estimate III.

113. But it may turn out that it is not now practicable to make this disposition of the Quit and Crown Rents. The closeness of the income from the crown revenues to the amount of the Civil List, the fact that there is practically no surplus, but in some years even a deficit (the average net income since the beginning of the present reign has been £477,142, and the amount of the Civil List £470,000), would seem to suggest that the present state of these funds is such that they would not bear a transference of this kind; or that if the capital and income of the Quit and Crown Rents be withdrawn in order to be invested in Irish forestry, the deficit in the current income of the crown revenues during the period of the lock-up would have to be made good from some other source. In such case it might be more convenient for the business of forestry development to be directly financed from the Exchequer. We have examined carefully the idea of using the Quit and Crown Rents in this way, and we have described procedure for giving effect to the idea should it be found practicable. We have done so because the idea is very prominent in the public mind, and because it would be a natural use for these revenues, which, had they been applied long ago with any such husband-like consideration for the Irish property from which they came or such regard for the public obligations affecting it, might have greatly increased the value of that property for the crown, and greatly benefited Ireland in the process. Moreover, the history of these rents gives additional point to the moral claim of Ireland to have prompt redress given to the sad waste of her resources which has taken place in this respect and which is still continuing. But it would be equally satisfactory that the scheme of forestry development we have outlined should be directly financed from the Exchequer by means of an annual parliamentary vote until the period when revenue became available to cover the net expenditure we have estimated above. Part of the scheme, the part outside the State forest, will have to be dealt with in this way in any event; and we have made an estimate for dealing in this way with the State forest. This is the method adopted with regard to the Land Purchase Aid Fund, out of which cash is drawn for the bonus to vendors under the Act of 1903 (Sec. 48). By this plan Ireland would be building up for herself a national asset of great value, which would be her own possession, and the income from which she could apply to her own uses; and the value of the security on which the Imperial Exchequer is committed to advance so much money would, at a comparatively small outlay, be very considerably increased.

PART IX.
FINANCE.

*Financing of
forestry schemes
from Exchequer
compared with
proposal for
utilising Quit, etc
Rents*

PART X.—SUMMARY OF PRINCIPAL CONCLUSIONS AND
RECOMMENDATIONS.

PART X.
SUMMARY OF
PRINCIPAL CON-
CLUSIONS AND
RECOMMEN-
DATIONS.

114. The main conclusions and recommendations described in the Report may be summarised as follows:—

- I. (1.) That forestry has, in the past, been deplorably neglected by Government in Ireland; and that, in consequence, while the country is particularly well suited for tree growing, the percentage of land under woods in Ireland is now the lowest of any country, save one, in Europe;
- (2.) That this percentage is too low for the welfare of the country; and
- (3.) That nevertheless, it is being wastefully diminished at the present time chiefly under the indirect influence of the Land Purchase Acts, with great loss to the country and imminent danger to existing Irish wood-working industries.
- II. (1.) That with the transfer of land under the Purchase Acts to peasant owners, an obligation in respect to existing woods, as well as other obligations connected with landed property, passes from the selling proprietors to the State, and has not been effectively provided for in these Acts;

- (2.) That a comprehensive scheme of forestry, whether undertaken through local authorities, private owners, or directly through a Forestry Department, can only be carried out by or under the direction of the State;
- (3.) That an exceptional opportunity, which cannot recur, for acquiring land suitable for forestry, and not so suitable for any other use, presents itself now in Ireland, in connection with the Land Purchase Acts; and
- (4.) That such a scheme, including the preservation and extension of existing woods, and the creation of a new forest area, is a sound investment for the nation, necessary for her agricultural and industrial development, and for the provision of an important capital asset which must otherwise be wasted.

III. (1.) That an area of at least 1,000,000 acres of woodland is essential for the agricultural and industrial requirements of the country.

- (2.) That as a result of certain surveys made for the Department of Agriculture, and for the Committee, it can be safely estimated that there are available in round numbers in the different classes of land suitable for plantation, and not so suitable for any other use, some 700,000 acres, or, with the 300,000 acres of existing woodlands, a total possible forest area of at least 1,000,000 acres, made up in round numbers as follows:—

300,000 acres of existing woodlands.

200,000 acres of plantable land in large blocks.

500,000 acres of plantable land in smaller blocks.

- (3.) That, on account of State action in the past, the effect of existing legislation on Irish woodlands, the fact that under the Land Purchase Acts the responsibilities of the private landlords have been transferred to the State, and the opportunity now available for acquiring woods and lands suitable for forestry under these Acts, a special obligation lies on the State for taking immediate action.

IV. (1.) That legislation is not necessary for the establishment of a Forestry Authority, as the Department of Agriculture and Technical Instruction is endowed with the necessary legal powers for aiding, improving, and developing forestry and promoting education connected therewith, and, therefore, for carrying out the national scheme of afforestation recommended by the Committee, but that it has not been provided with adequate funds for this purpose. That the Forestry Section of the Department should be strengthened and developed with a view to administering this scheme, and special funds provided for the work it is to do.

- (2.) That the scheme should provide for the acquisition by the Forestry Authority of 200,000 acres of plantable land, in large blocks, to be planted, managed, and maintained in the interests of the country as a whole, as State forest. That the Forestry Authority should also acquire and manage the larger woods passing from the hands of their present owners under the Land Purchase Acts.

- (3.) That, while the large woods acquired under the scheme would be managed directly by the Central Authority, the smaller woods which are passing from their present owners could be more economically managed by the County Councils, and that such woods, other than those small enough to be allotted with tenant-purchasers' holdings, should be acquired by the

County Councils and managed by them, in the interests of their respective counties, subject to the expert advice and supervision of the Forestry Authority. That advances under the Land Acts should be made to the County Councils, as trustees, to enable them to acquire such woods and small lots of plantable land in connection with them, and that they should be aided by the Forestry Authority and the Board of Works, with such facilities as are proposed for private owners.

PART X.
SUMMARY OF
PRINCIPAL CON-
CLUSIONS AND
RECOMMEN-
DATIONS
—

- (4.) That increased encouragement should be given to private owners to plant portions of their holdings. That, in the case of the smaller holders, such encouragement should take the form of an extension of the county horticultural schemes under the County Councils and the Department of Agriculture; and, in the case of the larger holders, of an extension of the system of Board of Works' loans on the lines suggested in Part V. of this Report.
 - (5.) That effective provision for the training of working foresters and woodmen has already been made at the Forestry Station at Avondale under the Department of Agriculture, and partial provision for higher training at the Royal College of Science, Dublin; that the extension of this provision, and the establishment of an effective system of higher technical instruction for the training of experts, forestry officers, and owners of woodlands at the Royal College of Science, in connection with Avondale, is desirable.
 - (6.) That the proper organisation of the timber trade and the establishment of a recognised system of business management is necessary in the interests of the grower and the manufacturer, and for the further development of forest industries, and that the Department should assist in promoting such organisation, and should provide technical instruction and other facilities relating to this branch of the scheme.
- V. (1.) That the net expenses of the national scheme of afforestation recommended, including the purchase of the land required, are estimated to amount to £44,525 per annum in the first decade, to £66,725 in the second decade, to £74,600 in the third, to £67,100 in the fourth, and to £32,600 in the fifth, after which period the scheme provides a surplus over purchase annuities and working and administrative expenses, eventually yielding a return of $4\frac{1}{2}$ per cent. on the total capital invested.
- (2.) That the proceeds of the Irish Quit and Crown Rents might be appropriately utilised for promoting forestry in Ireland; and would suffice to finance the national scheme with the exception of a sum of £13,600, which would require to be annually provided by Parliament for five decades, and £8,600 for the sixth decade after which a surplus would be available.

CONCLUDING REMARK.

115. We have now accomplished our task to the best of our power. We have not spared pains in endeavouring to understand the problem we were asked to consider, and we have tried to set forth the result plainly and comprehensively, and in such a shape as it seemed to us might furnish Government with ready materials for action. In presenting our Report we desire to express in the strongest way our sense of the obligation which lies upon the State to act immediately in this matter. Grievous mischief, loss, and waste, accompaniments of legislation and other State action, are going on, and ought to be checked

without delay. Furthermore, as another accompaniment of legislation, a great opportunity for husbanding and developing one of the resources of the country is now available, and if it be allowed to pass without being used, it means not only missing possible gain to the country but producing further actual loss. Legislation is not needed in order to carry out the major part of the reform we suggest. A financial provision, in the nature of an investment, on lines which we have striven to work out will suffice for a most important beginning to be made. It might be supposed that, in the circumstances, the duty of the State is so obvious that we need have no anxiety on the subject. But so many recommendations of so many commissions dealing with Ireland have been disregarded that we cannot overlook the possibility of this fate happening to the fruit of our own labours. We have been encouraged, however, in giving our time to the task by the belief that the Government, if the facts entitled them, were prepared to consider this case as exceptional in its urgency; and we are confident we have shown that they will be justified in so considering it. The Committee are unanimous in their Report.

116. In concluding this Report, we desire to place on record our appreciation of the great zeal and ability of our Secretary, Mr. Denis J. McGrath, in the discharge of his duties. We are indebted to him for much valuable help in the holding of our inquiry and the preparation of our Report and its Appendices.

We desire also to thank Mr. A. C. Forbes, Forestry Expert of the Department, for the most valuable help he gave us all through the inquiry.

We have the honour to be,

Sir,

Your obedient servants,

T. P. GILL, *Chairman*.

CASTLETOWN
OF UPPER OSORY.

WILLIAM REDMOND.

† DENIS KELLY.

H. DE F. MONTGOMERY.

W. F. BAILEY.

W. R. FISHER.

J. R. CAMPBELL.

DENIS J. McGRATH,

Secretary,

DUBLIN, dated this sixth day of April, 1908.

DUBLIN CASTLE,

6th April, 1908.

SIR,

I have to acknowledge the receipt of your letter of this date forwarding,
for submission to His Excellency the Lord Lieutenant, the Report of the
Departmental Committee on Irish Forestry.

I am,

SIR,

Your obedient Servant,

J. B. DOUGHERTY.

THE SECRETARY,

Department of Agriculture

and Technical Instruction for Ireland,

Upper Merrion Street, Dublin.

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DEPARTMENT OF AGRICULTURE AND TECHNICAL INSTRUCTION
FOR IRELAND.

REPORT

OF THE

DEPARTMENTAL COMMITTEE

ON

IRISH FORESTRY.



Presented to Parliament by Command of His Majesty.



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